THE ORIGINS OF NUCLEAR COOPERATION

A CRITICAL ORAL HISTORY BETWEEN ARGENTINA AND BRAZIL

Edited by Rodrigo Mallea, Matias Spektor and Nicholas J. Wheeler

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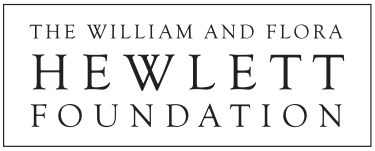
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ANGRA DOS REIS NUCLEAR POWER PLANT

About the Editors

Rodrigo Mallea joined the Ministry of Foreign Affairs of Argentina in 2014. He holds a master's degree in Political Science from the State University of Rio de Janeiro and is currently pursuing a Ph.D. in International Studies with Universidad Torcuato Di Tella in Buenos Aires.

Matias Spektor is an Associate Professor of International Relations at Fundação Getulio Vargas in Brazil. He is the author of *Kissinger e o Brasil* (2009) and *18 dias: quando Fernando Henrique e Lula se uniram para conquistar o apoio de Bush* (2014). He is currently researching a book on the Brazilian nuclear program.

Nicholas J. Wheeler is Professor of International Relations at the University of Birmingham in the UK, and directs the Institute for Conflict, Cooperation and Security. He is the author of several books, including *Saving Strangers: Humanitarian Intervention in International Society* (2000) and with Ken Booth, *The Security Dilemma: Fear, Cooperation and Trust in World Politics* (2008). His next book Trusting Enemies is under contract with Oxford University Press.

Participants

Adolfo Saracho was the first Director of the Department for Nuclear Affairs and Disarmament of the Foreign Ministry of Argentina (1983-1987). He was a member of the Board of the National Atomic Agency Commission (1987) and was President Alfonsín's envoy to several meetings of the Group of Six. He was Argentina's Ambassador to Turkey and Consul-General in New Orleans, and a member of the Commission for Disarmament in Bern and Geneva.

Oscar Camilión served as deputy foreign minister under President Arturo Frondizi (1958-1962). He was then Ambassador to Brazil (1976-1981), Foreign Minister (1981), and Defense Minister (1993-1996).

Luiz Augusto de Castro Neves served at the Brazilian Embassy in Argentina (1971-1974) and as Deputy Chief of the Energy and Mineral Resources Division at the Brazilian Foreign Ministry (1979-1981). Between 1978 and 1985 he also served as the permanent Brazilian representative at the IAEA Board of Governors. He served in the Brazilian National Security Council (1981-1987), and in 1986/87 he was a delegate in negotiations with Argentina. He was Deputy Secretary for Strategic Affairs to the Brazilian President (1992-1995) and Assistant-Deputy Foreign Minister. He served as Brazil's ambassador to Paraguay (2000-2004), China (2004-2008), and Japan (2008-2010).

Andrew Hurrell is Montague Burton Professor of International Relations at Oxford University and a fellow at Balliol College. He wrote *Inequality, Globalization and World Politics* (with Ngaire Woods, Oxford University Press 1999), Order and Justice in International Relations (with Rosemary Foot and John Lewis Gaddis, Oxford University Press 2003) and On *Global Order* (Oxford University Press 2007), as well as numerous articles on international politics and Latin America.

Luiz Felipe Lampreia served in the Foreign Minister's cabinet (1974-1979), was deputy Foreign Minister (1992-1993) and then Foreign Minister under President Fernando Henrique Cardoso (1995-2001). He was Brazil's Ambassador to Suriname (1983-1985), Portugal (1990-1992) and Geneva (1993-1994).

Rodrigo Mallea was a MA student at the Rio de Janeiro State University and an associate researcher at FGV at the time of the conference. He now works at the Ministry of Foreign Affairs of Argentina and is currently pursuing a Ph.D. in International Studies with Universidad Torcuato Di Tella in Buenos Aires.

Timothy McDonnell was a MA candidate at George Washington University and a program associate at the Woodrow Wilson International Center for Scholars at the time of the conference. He is now a PhD candidate at MIT.

Eduardo Mello was a research assistant at the Center for International Relations at FGV at the time of the conference. He is now a PhD candidate at the LSE.

Dani Nedal was a research fellow at the University of Birmingham at the time of the conference. He is now a PhD candidate at Georgetown University.

Roberto Ornstein was the Head of International Affairs at the National Atomic Energy Commission of Argentina (CNEA) from 1979 to 1995. He was CNEA's director for Planning, Coordination and Control (1987-89), Manager of International Projects (1989-91), International Advisor to the President (1995-98), Secretary to the Directorate (1998-99), International Affairs Coordinator (2000-02), and Head of International Affairs (2002-07). Since retirement he remains at CNEA as advisor for international affairs and adjunct investigator.

Carlo Patti has a PhD from the University of Florence and was an associate researcher at FGV at the time of the conference. He is now assistant professor in International Relations at Universidade Federal de Goiás in Brazil.

Sebastião do Rego Barros coordinated the desk of economic and commercial affairs in the Office of the Foreign Minister of Brazil (1976-1979) and was Chief of Staff to the Deputy Foreign Minister (1982-1984). He was a nuclear negotiator in several fora, including heading the Brazilian delegation to the II NPT Review Conference in Geneva (1980), and being a member of the delegation in the IAEA Board of Governors (1984). He was Deputy Foreign Minister (1995-1998), as well as Ambassador to the USSR/Russia (1990-1994) and Argentina (1999-2001).

Rubens Ricupero was head of the Americas Department at the Brazilian Foreign Ministry (1981-1985) and Special Advisor to the President (1985-1987). He served in the Brazilian embassies in Buenos Aires (1966-1969) and Washington (1974-1977), among others. He was ambassador to the United States (1991-1993) and Italy (1995), as well as Minister of the Environment (1993-1994) and of Finance (1994).

Matias Spektor is an associate professor at FGV, where he directed the Center for International Relations at the time of the conference. He is the author of *Kissinger e o Brasil* (2009), *Azeredo da Silveira: Um Depoimento* (2010) and *18 dias: quando Lula e Fernando Henrique se uniram para conquistar o apoio de Bush* (2014). He was a visiting fellow at the Council on Foreign Relations (2010), the Woodrow Wilson International Center for Scholars (2012), King's College London (2013), and the London School of Economics (2014).

John Tirman is the author of several books on global affairs including *Terror, Insurgency and the State* (Penn Press, 2007) and *The Fate of Civilians in America's War* (Oxford University Press, 2011), and more than one hundred articles in a wide

range of periodicals. He is Executive Director of MIT's Center for International Studies, where he is also Principal Research Scientist.

Nicholas J. Wheeler is Professor of International Relations and Director of the Institute for Conflict, Cooperation, and Security at the University of Birmingham (UK) and Principal Investigator of the project on The Challenges to Trust Building in Nuclear Worlds (ESRC/AHRC Fellowship under RCUK's Global Uncertainties Programme: Security for All in a Changing World). He wrote *Saving Strangers: Humanitarian Intervention in International Society* (Oxford University Press 2000), *The Security Dilemma: Fear, Cooperation and Trust in World Politics* (with Ken Booth), among several other works on various aspects of international security.

Note to Readers

The Origins of Nuclear Cooperation is a book-length transcript of the conference we held in Rio de Janeiro during 21-23 March 2012 under the auspices of FGV and the ICCS.

The Rio conference followed a Critical Oral History (COH) methodology: a process of collective deliberation where academic experts drawing on the documentary record engage key officials and policy-makers in reflecting on a series of events that the practitioners had an active role in. Unlike an academic conference, COH meetings are not structured around written papers by experts. Instead, it is the former officials and policy-makers who were involved in the negotiations that take center stage. Setting it apart from one-on-one oral history interviews, a COH meeting invites individual practitioners to critically reflect on their existing narratives of an event in the light of the recollections of other practitioners, archival materials in the public realm, and the view of expert academics. The expectation is that the simultaneous presence of people who were involved in the events under study, documents that many of these people produced at the time, and scholars who come to the subject as experts in the field will make for a uniquely rich discussion about what happened, why it happened, and to what effect (Blight and Lang 1995, 2007, 2010; Lang 2000; Blight and Welch, 1990; Blight, Kramer and Welch 1990; Scott and Smith, 1994, Wohlforth 2003).

Our meeting was not the first time that a group of former Argentine and Brazilian negotiators had sat alongside academics to discuss the evolution of the nuclear bilateral relationship. Other meetings of this kind had taken place in 1989, 1996, 1998 and 2008, and these meetings have provided important insight and knowledge for the scholarly community (Levanthal and Tanzer 1992, Albright and O'Neill 1996, and Doyle 1999). However, the FGV-ICCS Rio conference in 2012 was the first time that the historical actors and academics could anchor their conversation in the wealth of official documents that made up the cable traffic between the two countries (and between them and the United States) at the time. Comparing this transcript to those originating in previous attempts at mapping the origins of nuclear cooperation, the key difference is the wealth of details about how governing elites in Buenos Aires and Brasília interpreted what the other side was doing. Thanks to the newly released documents and to the guided discussion, we can now have a far better grasp of why the two countries did what they did and how they went about it.

The 2012 COH meeting reflected the research interest of Professor Wheeler to explore the lessons that

might be learned from a study of the origins of Argentine-Brazil nuclear cooperation for de-escalating future nuclear rivalries in situations where two rivals are developing mastery of nuclear fuel-cycle capabilities that could lead to the building of nuclear weapons.[1] The framing of the meeting was also shaped by the research program that Professor Matias Spektor coordinates at FGV on "Brazil and Argentina in Global Nuclear Order", which includes retrieving sensitive documents from private and official collections, and over a hundred hours of oral history interviews with individuals from business, government, and the scientific community in both countries and in the United States (Mallea 2012, Patti 2012, Morais 2014, and COH Briefing Book 2012).[2]

The preparation of the conference involved several steps. First of all, our research team prepared literature reviews to help us establish the parameters for the collective interview. We then worked for several months in the following archives: Archivo Histórico del Ministerio de Relaciones Exteriores y Culto (Argentina), Arquivo do Ministério das Relações Exteriores (Brazil), National Archives and Records Administration and The National Archives (United States), plus the private collections of people we met along the way who were generous enough to let read and sometimes copy from materials they had kept.

After completing the archival legwork, our team curated a COH Briefing Book of selected documents that we thought should inform the debate during the conference. Our priority was to accurately represent the two sides of the issue to the maximum extent possible, and to present the materials chronologically. Whenever possible, we made it a point to include documents written by, or at least familiar to, eye-witness participants. We also added relevant historic press clippings and prepared a detailed chronology of events to make sure all conference participants worked within a common framework during the conversation. The Briefing Book we distributed to participants is a volume of roughly 200 pages that is available for download here.

As archival work progressed in the background, we set out to interview every practitioner we found who would be willing to speak to us about the origins of Brazil-Argentina nuclear rapprochement, and who might be a good fit for a COH conference. The key criterion for choosing participants was the level and relevance of their involvement in Argentine-Brazilian nuclear negotiations. We also wanted a group of people who would know one another, at least by reputation. Moreover, we wanted to have

1. See Professor Nicholas Wheeler's ESRC/AHRC Global Uncertainties project on 'The Challenges to Trust-Building in Nuclear Worlds'. http://www.birmingham.ac.uk/research/activity/conflict-cooperation-security/index.aspx.
2. See also the collection of electronic dossiers prepared by the FGV team on Brazil's Nuclear History at NPIHP Research Updates http://www.wilsoncenter.org/publication-series/npihp-research-updates

a collection of people who would be able to disagree with one another (this meant staying clear of authoritative figures whose presence might cause others to fall in line behind them). In the process of conducting the pre-interviews we began to develop provisional interpretations for further testing during the COH conference. We also came up with a list of nine invitees, all of whom accepted to attend (two officials from Argentina could not make it in the last minute due to personal reasons).

In the run up to the conference we contacted participants over email and phone to clarify our own interpretation of key documents, and also to begin to develop some kind of network between them and the core research team. What we did not know at the time but got to learn in the process was the importance of empathy: by interviewing participants beforehand in one-on-one or two-on-one format, we were able to get to the COH date with a better sense of how individuals thought about the issues at stake and how the felt about them. This came in handy at the time of managing the group and keeping the ball rolling during the three days of the conference.

This book presents the verbatim transcript of the meeting. We kept our editing to a minimum, with a focus on deleting repetitions, fixing odd phrase structures typical of the spoken word, and turning a lively conversation among a dozen participants into a readable flow. We also deleted references across the first version of the transcript to meeting procedures, points of order concerning coffee and meals, and the odd conversation between the moderator and the interpreters or the film crew. On a few occasions we inserted dates, names and places for the sake of precision.

The COH meeting in Rio occurred in three working languages – Spanish, English, and Portuguese. Our approach to translation for this book is to remain as close as possible not only to what participants said, but also to how they said it, as far as the final form does not compromise understanding. We are simultaneously launching this book in the three languages.

We also taped the meeting on film (available at FGV's website). It is our expectation that the images be of use to those interested in using and teaching the oral history methodology in particular, and to those with an interest in History, Politics, and International Relations more generally.

In conducting this critical oral history we were aware that the practitioners attending the meeting were bound to be concerned with their legacy and the public perception of their work at the time of the events were sought to revisit. As such, we paid extra attention to the issue of strategic reconstruction of events, one of the most common criticisms levied against oral-history work. As a rule of thumb we tried to be as attentive as possible to conflicting accounts in the course of the conversation, and to probe deeper whenever we felt practitioners were offering mere impressions instead of thought-out

arguments based on their own recollections.

We benefited from the fact that none of the practitioners had had an opportunity to systematically reflect about the origins of Argentine-Brazilian nuclear cooperation before the COH meeting. This was the case even for Oscar Camilión and Luiz Felipe Lampreia, both of whom had published personal memoirs about specific periods of their careers (Camilión 1999 and Lampreia 2009). Coming to the conference without too many axes to grind, practitioners found the space to cover much ground, not only on observed behavior, but also on unobservables such as mental processes and their subjective assessment of specific situations.

Our approach to interview technique was pragmatic. We sought to test competing argument against one another, and encouraged interviewees to offer evidence to support their accounts. We also asked a number of counter-factual questions – "what would have happened if you had done X instead of Y?" Whenever we encountered resistance to our probing, we chose to ask indirect questions rather than insisting on answers to the original questions we had put forward. As a rule of thumb, we also anchored most questions on recently declassified documents that practitioners had had a chance to read in their COH packages. Above all, we asked lots of follow up questions.

The single most difficult hurdle in the course of the interview was the tendency of practitioners to strategically reconstruct the past with an eye to suggest nuclear bilateral cooperation, once it became a priority for the governments in Brasília and Buenos Aires, proceeded smoothly. The documentary record shows unequivocally this was not the case, a conclusion that is supported by the dozens of interviews we conducted with people one-on-one. We know that managing cooperation throughout the 1980s proved to be a taxing diplomatic task for both sides.

Understanding why practitioners would want to suggest things were smoother than they actually were is not difficult. The narrative according to which bilateral nuclear cooperation has no enemies inside Argentina or Brazil, and that is the best possible outcome for the two of them and for the South American region more widely has been a pillar of both countries' diplomacy. Presenting nuclear cooperation as a resounding success helps them use the existing schemes as a shield against what they consider to be an intrusive global non-proliferation regime that is dominated by the major nuclear states with an interest in not seeing Brazil or Argentina develop their peaceful nuclear industries.

As interviewers, we sought to overcome this problem by confronting the standard narrative with data contrary to that point of view and by explicitly telling practitioners that we had a duty to play "devil's advocate". The fact that the moderator and the research team were linked up through an electronic

messaging system during the meeting made this process much easier than it would have been otherwise, as it facilitated impromptu questions and follow-up.

In terms of scheduling, one of our concerns was that many of the participants at the conference did not know each other in person, or had not seen one another for several decades. We therefore built plenty of space for informal talks before and during the meeting, taking slightly longer breaks for dinner, coffee, and luncheon.

Dr. Matias Spektor acted as moderator, addressing people in their own languages. As the person responsible for starting the conversation at each session, ensuring questions were properly answered, and encouraging give and take, he had a great deal of improvisation to do. Chairing a COH conference requires a lot of activity due to the fast-paced nature of the discussion. Professors Wheeler and Hurrell also asked questions during the proceedings of the conference, often working as provocateurs. John Tirman and Tim McDonnell proffered several suggestions to the moderator as to how to facilitate the discussion.

Participants spoke in their native language, even when they had working knowledge of the other languages around the table. Interpreters were present at all times during the meeting (but absent from breaks and meals).

Luiz Felipe Lampreia was present in sessions 1, 2 e 5. Rubens Ricupero was present in sessions 2 e 3. Sebastião do Rego Barros participated in sessions 1, 2, 3 e 5. Oscar Camilión, Luiz Augusto Castro Neves, Roberto Ornstein and Adolfo Saracho were present throughout, as was the case for the research team, Andrew Hurrell, John Tirman, Nicholas Wheeler and Matias Spektor. Oscar Camilión participated via video-conference from Buenos Aires.

The remainder of the book is organized as follows.

An introduction by Rodrigo Mallea and Matias Spektor briefly summarizes the story behind Argentine-Brazilian nuclear rapprochement for those readers who are not acquainted with the details. This is followed by a summary of key findings that emerge from the transcript by Nicholas Wheeler, Matias Spektor and Dani Nedal.

Then comes the full transcript of the meeting in five panels.

Panel I focuses on the period 1967-1979, when the bilateral dispute over the Itaipu Dam on the Paraná River shapes the terms of the nuclear relationship. This panel covers too the move on both

countries towards unsafeguarded, partially secret programs for uranium-enrichment and plutonium reprocessing.

Panel II deals with the period 1979-1983, when the Itaipu dispute is settled, Argentina goes to war against United Kingdom, it then announces it has developed uranium-enrichment technology at the Pilcaniyeu plant, and both Brazil and Argentina engage in nuclear trade with China, Iraq, Libya and the Soviet Union.

Panel III focuses on the period 1983-1985. Here the emphasis is on the interpersonal relationship between Presidents Figueiredo of Brazil and Alfonsín of Argentina, and the attempt on the part of the Brazilian Foreign Ministry to develop a joint agreement to renounce "peaceful nuclear explosions". The panel also deals with the rise and sudden death of Tancredo Neves and the rise to power of his successor, Jose Sarney in Brazil. At this juncture we see Argentina putting forward the first proposal for a system of mutual nuclear controls.

Panel IV concentrates on the period 1985-1988. The discussion explores the interpersonal relationship between presidents Alfonsín and Sarney. The reader will find participants' accounts of mutual mistrust around Pilcaniyeu's enrichment plant in Argentina and the Cachimbo shafts in Brazil. This is the period when Argentina volunteers to open up its own sensitive nuclear installations to Brazilian officials, and Brazil responds in kind. The moment coincides with Brazil's announcement that it has developed enrichment technology, and we find President Sarney moving to reassure Argentina of his country's peaceful nuclear intentions.

Panel V closes the transcript with a focus on 1988-1991. We follow the transition from the Alfonsín-Sarney presidencies to those of Carlos Menem in Argentina and Fernando Collor in Brazil, against the background of the end of the Cold War. We see the two governments moving fast to create the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC) as the non-proliferation regime gains sharper teeth. In so doing, they were signaling their commitment to peaceful purposes while remaining outside the NPT.

A detailed chronology of events and a full bibliography of existing literatures close the book.

Introduction

Rodrigo Mallea and Matias Spektor

It is easy to forget the transformative impact of nuclear cooperation between Argentina and Brazil on the international relations of South America. Nobody in the 1970s imagined that four decades later the regional system would resemble an incipient security community or that a spiral of security competition between the two major states was an increasingly remote possibility. On the contrary, when officials in Brasília and Buenos Aires first began to probe ideas of nuclear cooperation, the odds were stacked against any moves towards sustained engagement. These were, after all, two regional powers with a long history of diplomatic rivalry now bent on purchasing and developing indigenous uranium-enrichment and ballistic-missile technologies. The fact that they were secretly developing sensitive technologies such as nuclear fuel reprocessing and uranium enrichment outside any international safeguards only made the prospects for a policy of mutual nuclear assurance and sustained cooperation all the more implausible.

Nuclear cooperation between Argentina and Brazil was unlikely for other reasons too. National security doctrines identified the other side as a major potential security threat, with the military establishments having contingency plans in place in the event of war. Add the fact that opaque authoritarian regimes at the time shrouded official intentions in the nuclear realm in a veil of secrecy, generating a sense of uncertainty about future nuclear intentions both at home and abroad. The bilateral context was not evidently supportive of nuclear rapprochement either: high-level diplomatic contact between the two sides was scarce, with no major bilateral committees or working groups, low levels of social interdependence, modest trade, and only episodic meetings between heads of State. It is no wonder, then, that many international observers at the time, including the CIA, estimated that when it came to Argentina and Brazil, a spiraling security dilemma with serious geopolitical ramifications was a real possibility. This is what the intelligence communities in both Argentina and Brazil were reporting at the time as well (COH Briefing Book 2012).

As Argentine-Brazilian nuclear cooperation evolved in the long 1980s, however, it revolutionized the relationship between the two states in several practical ways. Authorities on both sides impo

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As Argentine-Brazilian nuclear cooperation evolved in the long 1980s, however, it revolutionized the relationship between the two states in several practical ways. Authorities on both sides imposed new restraints on their national nuclear programs, rewrote national security doctrines, set up formal mechanisms for mutual inspections of nuclear-related facilities, and began to coordinate their non-proliferation and disarmament policies more closely. In turn, the changed relationship between Brazil and Argentina reshaped the regional environment in South America as a whole, for it spilled over to include areas like freer trade, democracy promotion and joint military exercises. Other regional states soon began to join the newfound regional institutions centered around the Argentine-Brazilian axis that would spur unprecedented levels of region formation in the

Southern Cone of South America.

And yet, cooperation in the nuclear field between Argentina and Brazil in the 1980s was not straightforward or preordained. The nuclear relationship was recurrently tense. On the one hand, the two countries had a similar outlook on the global non-proliferation regime: both set out to resist the Latin American treaty to ban nuclear weapons (Treaty of Tlatelolco, 1967) and the global Treaty on Non Proliferation of Nuclear Weapons (NPT, 1968). Both shared the view that these emerging norms were all about ensconcing them in the global nuclear periphery, while granting special rights to the major nuclear powers of the day and their nuclear-industry cartels. So their officials could and did empathize with one another and even set out to coordinate their non-proliferation policies in multilateral institutions. On the other hand, however, the leadership harbored suspicions about the nuclear intentions of those on the other side. There were no guarantees to either side that efforts on the other to develop indigenous nuclear industries would always remain on peaceful ground and never metamorphose into nuclear-weapons programs.

What explains the onset of nuclear cooperation then? And how did the process evolve over time? The picture that emerges from this Critical Oral History (COH) meeting variously emphasizes the geopolitical, economic, normative and domestic-political aspects of the story. The resulting conversation among the historical witnesses and the academic experts is rich enough not to be easily contained in one single set of theories or concepts, or within a single overarching narrative. This introduction sets the scene for the transcript by presenting a summative account of nuclear cooperation between Brazil and Argentina with the view to guide the reader through the materials that follow.

Talk of bilateral nuclear cooperation began in earnest in the 1960s. Arguments on both sides bubbled up slowly but surely, and by the late 1970s there were systems in motion to get the conversation moving towards formal commitments. What is significant here is that Argentine-Brazilian nuclear cooperation is a case where the attempt at reconciliation between two authoritarian rivals comes before political democratization or social and economic interdependence. These countries started inching towards a stable peace under the watch of the military dictators in charge (Reiss 1995, Redick 1996, Carasales 1997, Barletta 1999, Fabbri 2005, Mallea 2012). Also, it is worth noting that cooperation set off at the exact time when security-dilemma dynamics may be expected to kick in. After all, it was around the year 1978 that the two governments were actively pursuing indigenous uranium-enrichment and reprocessing technologies, plus mid- and long-range ballistic missiles outside international safeguard agreements. Ironically, it

was when the international press began to report that Argentina and Brazil were moving towards nuclear weaponization due to fear of one another that officials were actually engaging in quiet, hard-nosed attempts at establishing the terms of bilateral nuclear engagement (COH Briefing Book 2012).

This was a time when Argentina and Brazil were locked in a ferocious diplomatic battle over the use of international rivers for big infrastructure works in the Plate Basin. The conflict had been dragging on since the mid-1960s, but was gaining momentum as Brazil moved forward with the construction of the Itaipu Dam in 1973 on the Paraná River just a few miles away from the Argentine border. Conflict not only induced a peak of diplomatic competition in South America, but it also spilled over to the United Nations and other multilateral bodies where the Argentine and Brazilian delegations clashed on a regular basis. River diplomacy became a serious hurdle on the way of bilateral diplomatic dialogue, let alone actual cooperation, for the better part of the decade up to 1979. Once the river dispute was settled, the two sides delivered their first nuclear agreement in May 1980.

A key explanation as to how the first steps of cooperation were taken is geostrategic. On this account which is evident in the COH transcript, Argentina and Brazil began to cooperate out of their relative weakness in the international system. For Argentina, Brazil was very far from being the only, or the chief, external threat. Argentine authorities in late 1978 faced the possibility of conventional war against Chile and were growing increasingly sensitive to the Malvinas/Falklands Islands, which the Argentine government occupied in early 1982 and tried to retain through force as the British government deployed a naval taskforce in response. Argentina was weakened too by failed economic policies and condemnation in the West and in multilateral institutions for the human rights atrocities perpetrated by its military governing regime. The argument that Argentina's relative weakness helps explain the leadership's decision to cooperate with Brazil on the nuclear file is now well-established (Kupchan 2010).

What was less known and only appeared in cursory form is the reality of Brazilian weakness at that juncture (Albright and O'Neill 1996). The Brazilian governing generals too felt that their ability to control the country was declining fast, and that the international system was increasingly hostile. The economic situation was dire, with creeping inflation, an exploding foreign debt, and a marked rise in income inequality. The pace of political liberalization was picking up momentum due to social pressures that the ruling military could not contain, with the generals in charge both resistant to change and uncertain about

how to contain it. From Brasília, the collapse of military rule in neighboring Argentina after the Malvinas/Falklands War was seen as a potential threat too: not to the security of the Brazilian state, but to the security of the Brazilian military government, given the ripple regional effect of millions of Argentines taking to the streets to kick the military out of power and elect a new president through the ballot-box. Also, the Brazilian military perceived Ronald Reagan and neoliberal economics as a threat to the protectionist economic policies that underpinned the regime.

The Argentine and the Brazilian nuclear programs were deeply affected by context. It was not just that budgets dried up in the face of more pressing priorities. But as the two countries began to transition to democracy, nuclear technocrats, scientists, technicians realized that the social contract that in the past had supported the quest in each country to develop nuclear technologies was now under threat from those who believed investing in nuclear infrastructure was a caprice of military regimes that were on their way out and had become too expansive and cumbersome to sustain. An accident involving the exposure of civilians to radiation in Brazil soon after Chernobyl – and revelations of the Cachimbo shafts (see below) – only made the case for nuclear power in South America more difficult to defend.

Officials in both Argentina and Brazil since the 1970s had also seen US non-proliferation policy as increasingly hostile, with its emphasis on technology denial. As the late 1970s progressed, nuclear and diplomatic officials in both Argentina and Brazil began to see the Jimmy Carter administration as a threat to national nuclear programs (Hymans 2006, Spektor 2009, Patti 2011, Mallea 2012). The two countries were particularly sensitive to the US Nuclear Non Proliferation Act (1978), which blocked nuclear technology transfers to non-NPT members and countries unrestrained by full-scope safeguards like them. Their uncoordinated response was to step up indigenous uranium-enrichment programs, even if this meant driving some of the core components underground.

Both countries shared a common view of the global non-proliferation regime as intrusive, discriminatory, and corrosive of their national rights to technological development. It was only natural that they should perceive national weakness in the face of biting non-proliferation rules was more powerful and pervasive than fears about mutual nuclear intentions. Given neither side seems to have seriously estimated that the other might progress towards a nuclear breakout capability anytime soon, they could turn to the more pressing concern of US-led sanctions and threats by working together. The shared perception of a hostile non-proliferation regime dominated by the major world powers – and the fact that mutual fears were relatively low – provided the glue that made bilateral nuclear cooperation via-

ble. As the COH transcript shows, the key to this was the role of nuclear sector professionals who developed mutual empathy rather than rivalry or enmity, a phenomenon that may have fed into an incipient epistemic community across the border (Alcañiz 2004, Fabbri 2005, Redick and Wrobel 2006, Kutchesfahani 2010, Hymans 2014).

But US policies also played a more positive role in facilitating Argentine-Brazilian nuclear cooperation. One of the key, new findings of the COH conference is the initiative of US Congressman from Illinois, Paul Findley (Republican), who in August 1977 traveled to Buenos Aires and Brasília to argue that a system for bilateral inspections outside the NPT may help mitigate suspicions in the United States, and elsewhere around the globe, about the nuclear intentions of Argentina and Brazil (Mallea 2012). In September 1977 the Findley proposal was published on *The Washington Post*, and the congressman took the opportunity to present it in person to Argentine President Videla and Brazilian Vice-President Pereira dos Santos. The Brazilian foreign ministry discarded Findley's plan on the spot, but the Argentines thought an arrangement along those lines might offer new points of departure for the relationship with Brazil. In subsequent years, the Argentines tried time and again to convince the Brazilians to work on a mutual inspections scheme (COH Briefing Book 2012).

The Findley proposal also bubbled up the policy chain in the United States. As US officials realized hardball nuclear diplomacy towards Argentina and Brazil was ineffective – and as the CIA began to report that neither country was engaged in nuclear-weapons programs –, they came to take the line that a mutual inspections system between Buenos Aires and Brasília may be enough of a guarantee for Washington. American diplomats became ardent advocates of greater levels of bilateral nuclear cooperation, even if these two countries remained outside the NPT and its new system of full-scope safeguards. Our findings about the Findley proposal offer a historical background to the decision by the US government to actively support and at times finance the joint training of Argentine and Brazilian experts in nuclear material accounting, verification, physical protection, and surveillance (Doyle 1999).

Another explanation to the origins of nuclear cooperation that recurs in the transcript pertains to the realm of domestic politics. The historical actors who joined us at the Rio de Janeiro conference emphasized the degree to which nuclear policy at home was a function of the balance of influence among competing constituencies. Indeed, as the transcript shows, one of the elements that recur in the deliberations is the difficulty of actors on each side having a realistic measure of what was going on in the nuclear politics of the other.

Let us start with the military. As pointed out abo-

ve, the military leadership acquiesced to initial nuclear talks in the late 1970s and retained its support for the endeavor throughout. To be sure, the process was far from smooth, with voices inside each country arguing for caution, especially on the Brazilian side. But overall the military establishments inside each country empathized with the nuclear priorities of the other, and they never felt sufficiently fearful about the other's nuclear intentions to trigger a real spiral of nuclear security competition. A precondition for this was the fact that for all the estimates around the globe that both Brazil and Argentina had plans in place to develop nuclear weapons, the record that is now available for research suggests a different historical verdict on how close Argentine and Brazil were to acquiring nuclear weapons. As the COH Briefing Book shows, there were several instances when Brazilian military officers expressed doubts about Argentine nuclear policies – normally as a cue to say that Brazil should have developed a nuclear weapons program as a security guarantee. But these statements need to be seen less as a genuine debate about nuclear policy options, and more as a reflection of the bureaucratic tug-of-war pitting President Sarney (1985-90) against those parts of the military establishment that operated to weaken his position. Sarney seems to have understood these dynamics early on, and used all the symbolism of his personal connection to Alfonsín (1983-89) to fight the battle for authority on the home front (more on this below).

The voices that argued for a weapons program were few, isolated and unable to get political traction (Hymans, 2006). The military's relatively relaxed posture towards bilateral nuclear cooperation was further facilitated by the fact that both sides made it a point to communicate the news of their acquired uranium-enrichment capabilities through special envoys before announcing to the wider world (see the next chapter). In turn, the COH transcript shows that the two foreign ministries contributed to nuclear rapprochement in specific ways. More than any other constituency, they were sensitive to the diplomatic costs of isolation in the face of the nonproliferation regime. For them, bilateral nuclear rapprochement was not merely a shield to politically resist pressure from the United States and its allies by developing common stances on key issues of the non-proliferation agenda, but also a tool to soften such pressures by putting in place incipient mechanisms for greater levels of bilateral nuclear transparency. Foreign ministries also provided a language of shared interest and mutual trust, as they developed common ways of framing issues in multilateral negotiations in Vienna and New York. This patina of commonality – even if imperfect and often slightly artificial - facilitated the development of bilateral ties in the nuclear field. Foreign ministries additionally played a facilitating role when it came to imagine alternative methods for confidence building. Roberto Abdenur,

a mid-ranking official in the Brazilian foreign ministry first probed the idea of a joint declaration renouncing nuclear explosions in 1984, presenting it to the Argentine side as non-official (even if he served in the foreign minister's staff and was evidently acting on instructions from his superiors). Argentina embraced the Brazilian initiative, but when the Brazilian foreign ministry sought support for its proposal from other constituencies in Brasília, it found none, and had no choice but to retract from the original opening. We also found that Foreign Minister Dante Caputo of Argentina and a new Division on Disarmament and Non-Proliferation within his ministry played a major role in conceiving alternative pathways to cooperation, and took it on themselves to engage their (far more reluctant) Brazilian counterparts.

Nuclear-sector professionals – scientists, technicians and technocrats in and around the nuclear industries and regulators – played a role in bilateral rapprochement as well. Starting in January 1977, technical exchanges between the two nuclear energy-commission's officials facilitated the development of interpersonal relationships between Argentine and Brazilian nuclear professionals. Among scientists, ties developed in doctoral programs in Europe and the United States, as well as in international nuclear scientific conferences. They gained momentum in 1978, when the United States convinced West Germany to deny Brazil uranium reprocessing and enrichment technologies. After all, Argentine officials at the time were too involved in a heated dispute with the US over the right to buy a third power reactor and a Swiss heavy water production facility without accepting full-scope safeguards. US officials were also denying sales of safeguarded, low enriched uranium to Argentina, which needed the fuel for its first nuclear technology export, a reactor they sold to Peru. By the mid-1980s, there was a significant flow of information at a practical, unofficial level between Argentine and Brazilian nuclear personnel. It is no wonder that soon after their first nuclear cooperation agreement, the two sides set out to develop joint nuclear-industry projects, like drawing on Brazilian engineering expertise in the building of Argentina's Atucha II reactor.

To be sure, the origin of Argentine-Brazilian nuclear cooperation in the long 1980s is the work of the military, professional diplomats, and nuclear-sector personnel. But no actors are more relevant to turning the initial steps of rapprochement into sustained cooperation than presidents Alfonsín and Sarney. Alfonsín's decision from the beginning of his tenure in December 1983 was to instrumentally use closer ties with neighboring Brazil as a tool to restore Argentina's standing in the wake of Argentina's defeat in the Malvinas/

Falklands War and to mark a departure from an era of brutal authoritarian rule. He too conceived of the relationship with Brazil as a potential way out of a punishing economic recession. In doing this, Alfonsín was no doubt using foreign policy to establish his own authority at home and build up an image of statesmanship that was bound to be instrumental in the domestic struggles to come (not the least the challenges he faced from an unruly military corporation).

Brazil's immediate response was cautious. President João Figueiredo was himself struggling to secure his own ability to control the timing of transition to civilian rule, and closer ties with democratically-elected Alfonsín was seen as many in the Brazilian military establishment as too risky a bet. But by early 1985, Brazil was on the way to civilian rule as congress appointed professional politician Tancredo Neves to run the country for a term, whilst an elected assembly drafted a new, democratic constitution. Neves died before taking office, however, triggering a heated debate in the cadres of the military regime as to how to conduct his succession. The final decision by the military was to hand over power to Neves' vice-president, Jose Sarney, a politician of the old guard with close ties to the military.

Alfonsín responded to the presidential succession in Brazil by stepping up the ante. In March 1985, as the Brazilian military are moving back to the barracks, he put forward the first proposal for a system of bilateral nuclear safeguards. Similar to the Findley proposal of 1977, this system for mutual reassurance was conceived of as an alternative to safeguard agreements with the IAEA. Although the Sarney administration turned down the proposal for such a system, they did agree to a working group to discuss the matter further. By November 1985, when the two presidents met in person for the first time in Iguazu Falls and declared that their nuclear programs will only have peaceful purposes, we see a flurry of initiatives that bring the two countries together as never before. In July 1987, Argentina and Brazil launch a process of presidential, nuclear declarations (Wrobel 1999). Alfonsín invited Sarney to visit the Pilcaniyeu nuclear facility, where Argentina had developed uranium-enrichment technology indigenously (and outside any international safeguards agreement). There the presidents agreed to curb secrecy in their nuclear programs. In April 1988, Alfonsín visited the Iperó (unsafeguarded) enrichment facility on the Brazilian side, turning the joint nuclear working group into a permanent commission to institutionalize bilateral cooperation. In November 1988, Sarney visited Argentina's Ezeiza reprocessing facility near Buenos Aires. These presidential initiatives established goals and timetables for cooperation, and gave rapprochement a sense of high priority. They also garnered public support for nuclear cooperation and signaled the international community their mutual commitment to

improving relations.

When asked, historical witnesses say that had Tancredo Neves lived to take office in Brazil in 1985 it is not clear that bilateral nuclear cooperation would have moved as far or as quickly as it did under Sarney. Neves was an old-school politician whose suspicion of Argentine intentions was more deeply ingrained than was the case with Sarney. Also, interviewees suggest that Neves would in all likelihood have devoted less attention and effort to foreign relations than did Sarney, who turned to the world beyond Brazil to try and strengthen his relatively weak position at home. One of the elements that emerges from the transcript is the fact that it was the Alfonsín administration that first conceived of proposals for mutual inspections and controls, and Alfonsín and Sarney went to great lengths in debating these issues before the onset of the Menem-Collor period that the literature normally focuses on (for example, Carasales 1997 and Solingen 1994).

Alfonsín understood that Sarney was unlikely to be able to move towards higher levels of cooperation at the same pace as himself. After all, Sarney had a weaker mandate because he had not been democratically elected. He also had to secure the backing of the military, whose move back to the barracks had to be negotiated each step of the way (unlike the Argentine military, Brazil's had not lost a war). But Alfonsín seasoned his choice for "strategic patience" with a decision to keep pushing Sarney for deeper levels of cooperation and transparency, even if it was clear from the outset that the Brazilian establishment would respond grudgingly. Sarney approached the issue instrumentally. From the outset, he used Argentine overtures as an opportunity to polish his own credentials as a statesman and cautiously seek out opportunities to assert authority in the nuclear field (and vis-à-vis the military establishment more generally). It is relevant that, as the COH transcript will show, Sarney and Alfonsín were not particularly friendly, with two different languages, a difficult barrier to overcome. But they struck up through a series of face-to-face meetings a strong emotional connection that built empathy and trust between them, with positive and far-reaching consequences for the relationship between their two countries.

Rapprochement in the nuclear field took place against a background of shrinking budgets for nuclear activities. Finance ministries in both Argentina and Brazil held the view that nuclear programs were hindering domestic economic growth – not only by the funds they sucked up, but also by raising suspicions internationally and possibly restricting, albeit indirectly, foreign investment in a new era of economic globalization and integrated markets. This argument was relevant for Brazilian lawmakers, who in 1988 wrote into the constitution that their country would develop nuclear technologies for peaceful purpo-

ses only. In this the current transcript helps qualify the argument that nuclear rapprochement is better seen as a function of Argentina's need to accommodate Brazil out of sheer strategic weakness (Kupchan 2010: 122-132). The picture that emerges here is the degree to which the dominant view in 1980s Brasília is one of relative economic weakness, technological backwardness, and leadership frailty in the face of a bumpy transition to democracy.

As Brazilians and Argentines went to the polls in 1989, the debate about nuclear choices was framed in terms of economic management. Both Carlos Menem (Argentina) and Fernando Collor (Brazil) won the vote on the promise of reining in inflation and reversing their countries' economic fortunes, and saw nuclear policy through those lenses. Even though foreign observers feared a possible rollback in Argentine-Brazilian nuclear rapprochement (Kessler 1989, Albright 1989), in November 1990 Menem and Collor took nuclear cooperation one step further by establishing a common system for accounting and controls of all nuclear activities. Within months, they set up the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC) as the bilateral agency to carry out inspections and controls, and negotiated a safeguards agreement between themselves, the ABACC and the IAEA. In 1994 Argentina and Brazil joined the Tlatelolco Treaty that establishes Latin America as a Nuclear Weapons Free Zone, and in 1995 and 1998 they joined the NPT respectively for reasons that fall out of the chronological remit of this Critical Oral History.

The COH transcript shows the degree on which economic constraints to both created an incentive for mutual nuclear cooperation and limited whatever scope there might have been to turn that initial rapprochement into a program for joint nuclear-technology development for peaceful purposes. As witnesses in both nuclear sectors often repeat, important as nuclear rapprochement has been in transforming the security environment of South America, there is to this day a sense of lost technological and commercial opportunities.

The fact that Argentina and Brazil managed to build a joint inspections system for nuclear reassurance and joined the regional and global non proliferation regimes should not lead readers to believe that the relationship has progressed smoothly at all times, or that it has become a fully developed trusting one. Though we observe that there has been a shift from rivalry to cooperation in the political, economic and military arenas, low-level suspicion, misperception, mutual recriminations, and occasional frustration at the lack of progress in bilateral nuclear cooperation have emerged from time to time, since the historical episodes chronicled in this book. What is important to retain from the materials below is the commitment of both sides to avoid the less

Witnesses to Nuclear Rapprochement: Key Junctures

Matias Spektor, Nicholas J. Wheeler, and Dani Nedal

The existing historiography of Argentina-Brazil nuclear relations can be divided into two broad schools of thought. The first argues that by the end of the 1970s, there were genuine concerns in both governments about the nuclear motives and intentions of the other, creating the risk of their geopolitical rivalry developing into a nuclear arms race (Spector and Smith 1990; Resende-Santos 2002; Kupchan 2010). What is fascinating about this case is that the potential for escalation through security dilemma dynamics (Jervis 1976; Booth and Wheeler 2008; Wheeler 2013) did not come to pass. Instead, regional rivalry gave way to an emergent security community in the Southern Cone (Hurrell 1998), and nuclear competition gave way to nuclear cooperation. For the second school of thought, the reason why security dilemma dynamics did not trigger a nuclearization of the Argentine-Brazilian nuclear rivalry is because they reject the alarmism underpinning the security dilemma explanation. According to this second school of thought, Brazil and Argentina were nowhere near developing on an industrial scale the proliferation sensitive technologies that would have triggered an escalating nuclear rivalry. But it was not just technological barriers that prevented such an escalation. Supporters of this position advance the following points: Brazil and Argentina did not hold enemy images in the way that, for example, India and Pakistan have done; they shared a common hostility to US non-proliferation policies that generated a common front which became, in turn, a spur for their own cooperation in the nuclear field (Barletta 1999; Carasales, 1997; Wrobel 1999; Hymans, 2006; Mallea, 2012; Hurtado, 2014; Hymans, 2014); and they were undergoing simultaneous transitions to democracy and market economies (Soligen 1994; Reiss 1995; Redick 1995; Doyle 2008).

As a consequence of the research that has been conducted by Dr. Matias Spektor and Professor Nicholas Wheeler in the context of this critical oral history (COH) project, we are now in a stronger evidentiary position to adjudicate between the two dominant schools of thought. As the COH transcript in this book shows, despite fringe pro-bomb voices in the Brazilian military establishment, and despite some suspicions in some quarters on both sides about the other's nuclear motives and intentions, the Argentina-Brazil nuclear relationship should not be interpreted as a

case of security dilemma dynamics. The transcript also strongly supports the second school's view as to the important role that US non-proliferation policy played in the origins of nuclear cooperation. Additionally, the transcript supports the view of those scholars like John Redick, Charles Kupchan, Mitchell Reiss, Claudia Fabbri, James Doyle, Isabella Alcañiz, Sara Kutchesfahani and Rodrigo Mallea who have argued that cooperation came before democratization, even if the latter served to deepen the former.

Although security dilemma dynamics are not operative in this case, the transcript does highlight key episodes where uncertainty about the other side's nuclear activities could have triggered insecurity and fear, leading potentially to spiraling security competition. Consequently, understanding from the point of view of the historical actors themselves how it was that these moments of tension failed to trigger competitive reactions becomes a key historical and conceptual concern. Indeed, it was gaining a better understanding of how Argentina and Brazil had defused their nuclear rivalry at the end of the 1970s and into the 1980s that motivated Wheeler's research design in his ESRC/AHRC project under Research Council's UK's Global Uncertainties Program on 'The Challenges to Trust-Building in Nuclear Worlds'. Specifically, Wheeler wanted to investigate how important trust was in the origins and development of Argentina-Brazil nuclear cooperation. As we show below, the transcript reveals that interpersonal relationships of trust between top-level diplomats, nuclear scientists, and even political leaders play an important, but hitherto marginalized, role in understanding the origins of the nuclear rapprochement.

Here we identify three episodes in Argentine-Brazilian nuclear relations which could have led to a serious deterioration in the nuclear relationship: the Itaipu dam conflict up to 1979; the Argentine announcement of uranium enrichment capability in 1983; and the discovery of shafts in Brazil believed to be sites for nuclear testing in 1985. We draw on the reflections of historical witnesses to show how two of the key factors highlighted in existing accounts, opposition to US non-proliferation policies and democratic transition, served to dampen escalatory dynamics. We also document how interpersonal trust operated to limit conflict at these key junctures.

The Itaipu dam conflict

Between 1967 and 1979, Brazil and Argentina were engaged in an intense legal and diplomatic battle about the use of international waters. The dispute was centered on the construction by Brazil and Paraguay of the hydro-electric plant of Itaipu on the Paraná River, a few kilometers upstream from the Argentine border. This period represented the height of geopolitical competition between

the two states. Luiz Felipe Lampreia, then advisor to the foreign minister of Brazil, noted during the COH workshop: 'The establishments in both countries – the bureaucracies and the military – were very much inclined toward an antagonistic relationship. The military had been formed under the idea that the most likely war scenario came from Argentina [...] Brazilian diplomats also saw Argentina as the main competitor for prestige and influence in Latin America. There was, therefore, fertile ground for contentious disagreements to get out of control'.

The then Argentine ambassador to Brazil, Oscar Camilión, also reflected that this was a very tense time in the relationship. He opined that 'at the time a deep confidence gap about the objectives of the other part was prevalent and this generated a particularly deep lack of trust among policy makers'. The dispute was resolved in 1979, when Argentina agreed to the Brazilian plans for the construction of the Itaipu dam while Brazil conceded that the treaty governing the use of the Paraná River for the purposes of that major infrastructure work would feature Argentina as a signatory (Spektor, 2002). Interpersonal relationships were at the heart of the Itaipu settlement. As Camilión put it in the COH meeting: 'Emotional reasons are, as you know, a fundamental part of all kinds of inter-personal relations. It was necessary to create a relationship of trust'. Indeed, the existing documentary record at the FGV Archive shows the degree to which the interpersonal dimension oiled the wheels of diplomacy, be it in the work of professional diplomats or at presidential level.

Resolving the Itaipu dam conflict was a precondition for setting in motion the tentative moves on both parts to first establish formal contact between the two nuclear sectors, and then build up confidence in the other side's motives and intentions. Once again, interpersonal relationships of trust appear to have been important in providing mutual reassurance at the scientific-technical level. During the conference Ornstein pointed out this dynamic. He said, 'Castro Madero's (the head of the Argentine Nuclear Commission, 1976-1983) relationship with Professor Hervásio Carvalho (President of CNEN, 1969-1982) was excellent […] They knew each other from before. Both were governors at the IAEA and had participated together in many meetings […] I think that the interpersonal relationship had a very positive influence on the agreements signed in 1980'.

In preparation for the COH meeting, we also had access to newly declassified documents that reveal information and insights that previous scholars working on the origins of the nuclear cooperation had not had an opportunity to consult (e.g. key works such as Redick 1995; Carasales 1992, 1995 and 1996; Hurrell 1998; Doyle 2008; Reiss 1995; Barletta 2000 and 2001; Alcañiz 2004; Fabbri 2005). The new archival materials show that between 1967 and 1979 there were no less than four attempts at drafting a bilateral nuclear agreement. The Brazilian nuclear sector and foreign ministry put forward proposals in 1967, 1972 and 1979, while Argentina's nuclear commission took the initiative in 1974. The cable correspondence shows that none of these attempts worked for a diverse set of reasons (COH 2012 Briefing Book). The documents, then, support the recollections of the players as to the importance of interpersonal

relationships in the run-up to the 1980 bilateral agreement, and show that diplomats and the nuclear sector personnel in Brazil and Argentina had participated in over a decade of regular and increasingly sustained interaction.

Camilión drew attention to the 'bottom-up' process within both countries promoting nuclear cooperation, but as with all cooperation-building endeavors in adversarial contexts, such processes also depend upon top-down leadership. In this case, the Brazilian president, General Figueiredo, had a strong affinity with Argentine culture and society, having lived there in exile as a child. As he signaled clearly to all his interlocutors, even before taking office, the Itaipu dispute was a matter that he felt personally committed to resolving within his first year in power. Eager to find a new basis for engagement with his Argentine counterpart, General Videla, Figueiredo visited Argentina in 1980 and signed the first-ever nuclear cooperation agreement between the two countries. This was the first visit since 1935 of a Brazilian head of state to Argentina.

At the COH conference, Camilión drew attention to the importance of personality in moving cooperation forward, but he also caveated this by highlighting that Figueiredo's political room for maneuver in visiting Argentina and signing the 1980 Agreement depended upon the prior resolution of the dam dispute. In his words, 'Figueiredo's arrival changed the atmosphere, there is no doubt at all… This probably would not have been very influential were it not for the fact that the relations had matured in that period'. The transcript suggests that key officials at the time believed that the 1980 nuclear agreement between two military leaders was highly significant in setting the compass of nuclear cooperation. As such, the conference further challenges the claims of those scholars who have argued that the key breakthroughs in nuclear cooperation only come after the two states have transitioned from authoritarian rule to civilian government (e.g. Solingen 1994a; 1994b; for a detailed discussion, see Mallea 2012).

Enrichment at Pilcaniyeu

In November 1983, the Argentine government publicly announced (having given the Brazilian government prior warning) that it had developed the ability to enrich uranium in a pilot-scale at the Pilcaniyeu facility that had, up to then, been secret. According to Argentine officials, the rationale for such a program was a reaction to President Jimmy Carter's nuclear non-proliferation policies. The Carter administration had suspended supplies of low-enriched uranium for an Argentine-built reactor in Peru. What is notable about the thinking of Argentine nuclear officials at this time, according to COH participant Captain Roberto Ornstein, then International Advisor to the Argentine National Commission, is that no one worried particularly about the Brazilian reaction. As Ornstein told the workshop, 'We did not perceive an adverse reaction or excessive concern

from the Brazilian side […] Obviously the Brazilian intelligence must have acted. But it was not considered that a reaction from the Brazilian side could have stopped the development'. If Brazilian intelligence was aware of enrichment developments in Argentina we do not know, but what we learned at the conference from Ambassador Castro Neves, then an early-career diplomat posted in Brazil's National Security Council, is that when the news arrived 'there was surprise'. News, however, arrived earlier in Brasília than it did elsewhere. The Argentine government gave Brazil early warning of the announcement by a personal, presidential letter that quickly found its way to Folha de São Paulo, the Brazilian newspaper. When the announcement went public, the same newspaper had it in its front page that Argentina was now in a position to build a nuclear weapon. In such circumstances, the Argentine gesture to give Brazilian authorities early warning was welcomed by the latter because it signaled the special character of – and Argentina's extra care for – the bilateral relationship. All other Latin American nations received the information during a private meeting between the Argentine foreign minister and the regional ambassadors posted to Buenos Aires.

Argentina's surprise announcement that it had mastered uranium enrichment technology did trigger competitive emulation on the part of Brazil's nuclear establishment, which doubled down on their effort to develop uranium-enrichment capacity at the Aramar facility (they eventually announced they too had mastered the enrichment cycle in 1987). And yet, what is important to highlight here, is that the competition over nuclear technology between the two countries did not spill over to the security realm. There is no evidence that Brazilian officials ever reasoned that Argentina's newly-found enrichment capability should be a cause for alarm since there was no evidence of an industrial scale enrichment operation. As Castro Neves said at the conference, 'It was understood more clearly that although Argentina could have been ahead of Brazil in many [nuclear] research areas, it had a shortcoming in terms of the industrial capability to transform such research into industrial activity'. He continued, telling participants 'that a careful analysis made by a diplomat from the Brazilian embassy in Buenos Aires who made a detailed examination of the energy situation in the Pilcaniyeu […] concluded that there were no conditions to enrich in a significant scale because there was not enough energy to power the compressors'. These reflections highlight the point we made above as to the technological limitations of both sides' nuclear programs. This material reality in the Pilcaniyeu case provided Brazilian officials and decision-makers with reassurances that Argentina could not break-in to the nuclear weapons club with this level of technological capability.

Revelations that each country had been working towards uranium-enrichment secretly did not derail bilateral nuclear talks. As Jacques Hymans puts it, 'Argentine-Brazilian nuclear cooperation was such a political success that it was able to survive the successive revelations of each state's secret uranium enrichment efforts (Hymans 2014: 372). We are of course left with the counterfactual question how would Brazil have responded to the Argentine 1983 announcement had it suspected

that Argentina possessed the material conditions to enrich uranium on industrial scale.

The public announcement of Argentina's nuclear breakthrough in 1983 coincided with the arrival in power of the new civilian president, Raul Alfonsín, who understood the potential for Brazil and Argentina to become ensnared in a nuclear arms race, and recognized that diverting resources to wasteful military competition would shipwreck his plans for securing Argentina's democratic transition. As his key nuclear advisor, Adolfo Saracho told the workshop, 'Alfonsín had a real wish for rapprochement with Brazil since the presidential campaign'. Building on the precedent of Figueiredo's visit to Argentina in 1980s, and conscious that Brazil was also entering the uncharted waters of democratic transition itself, Alfonsín was eager to meet with his civilian counterpart. He first sought contact with president-elect of Brazil Tancredo Neves, and after the latter died before taking office, moved quickly to establish contact with his successor, José Sarney. Even if they wanted to – and there is no evidence that they did or tried – the Argentine military were in no position to oppose such an outreach, having just been defeated in the Malvinas/ Falklands war and being at the receiving end of worldwide scrutiny over human rights violations during their time in power (1976-1983).

However, there is a counterfactual question that remains: How would Brazil have responded to an Argentinean decision to transform its nuclear program into a major component of its security policy in the aftermath of the Malvinas/ Falklands war? Such a scenario was not altogether implausible. While the military had no power or legitimacy to take on policy towards the islands once again, President Alfonsín referred to the British 'fortress' there as a threat to Argentina and to regional security in the South Atlantic more broadly (for quotes, see Blankenship: 22 and Paul 2000). The Brazilian government agreed with the Alfonsín administration. Every single interviewee we spoke to in the run up to the COH meeting was insistent that while Brazilian authorities never agreed to or condoned Argentina's invasion of the Malvinas/ Falklands in 1982, they did support Argentina's legal claim over those islands, believing the British military presence in the South Atlantic reduced regional security rather than increased it. Also, the Brazilian authorities interpreted the Reagan's administration decision to go out in support of the Thatcher government at the expense of hemispheric solidarity as a signal that South American states would have to be more self-reliant in the provision of their own security. As it had been the case since the 1950s, Brazil was adamantly opposed to any projection of power by a NATO member in the South Atlantic. But the fact remains that we could not find an obvious answer to the question of how Brazil would have responded had Argentina moved towards a nuclear weapon as a tool of bargaining with United Kingdom.

One of the key findings of the COH conference is that five months after Argentina announced its enrichment capability, Brazil informally presented a proposal for a joint declaration renouncing nuclear explosions. The Argentines agreed to this, and soon afterwards they told their Brazilian counterparts that they wanted to explore the

possibility of developing a new scheme for bilateral safeguards and mutual inspections. From that moment in 1984 onwards, it took the two countries over six years to finally agree to renounce peaceful nuclear explosions and develop a safeguards framework. This included mutual inspections, and one of the striking elements that comes out of the documents and the COH conference is the degree to which Alfonsín and Sarney not only developed a cooperative relationship, but also one in which there was a significant degree of empathy and trust for one another (for the relationship between empathy and trust, see Wheeler 2013, 2014).

Alfonsín was looking for ways to signal his trustworthiness to Sarney and the wider Brazilian establishment, and the way he found to do it was through a powerful symbol. When he landed in Brazil for his first meeting ever with Sarney at Foz do Iguaçu, Alfonsín volunteered to visit the Itaipu dam in person, there and then. By showing personal willingness to go in person to a location that had for over a decade soiled the bilateral relationship – and by suggesting that the two presidents should do it together and on the spot – Alfonsín was signaling his deep commitment to Argentine-Brazilian cooperation and the building of mutual confidence. As Saracho reflected, 'the visit was a gesture to mean that the issue of Itaipu was over […] It was there that the necessary confidence to go forward in many other issues besides the nuclear issue was created'. It is plausible that to some extent Alfonsín willingness to engage Sarney was a response to the fact that a month before their meeting, on two different occasions, a Brazilian military plane diverted its original route to overfly the Pilcaniyeu facility, a fact that has not been previously known in the existing literature. This willingness to reassure the Brazilian side as to his government's cooperative intentions might also be behind Alfonsín's decision mentioned in the Introduction to push in the preparatory negotiations for the Foz do Iguaçu declaration that the two delegations commit to 'bilateral safeguards'. Although the Brazilians turned down the proposal, they did agree to the establishment of a working group. It took this high-level presidential visit to cement the agreement and unlock the process of deepening cooperation (Mallea 2012).

The transcript brings out that there was a chemistry between the two leaders, and President Sarney's diplomatic advisor Ambassador Rubens Ricupero went so far as to express the depth of interpersonal feelings in the following terms: 'Sarney always showed solidarity with Alfonsín. His friendship was sincere and he made a point of doing everything he could to help'. Ricupero maintained that what united the two men in 'solidarity' was the common problems that they faced which he argued made them empathetic to the other's concerns and interests. Sarney 'understood', Ricupero said, 'that to a certain extent the problems were not only of Argentina, they were also ours'. Nevertheless, the former Brazilian advisor suggested that the communication channels between the two leaders were sporadic and intermittent. They did not have a common language to communicate in, and they did not have a culture of regular communication. But they met face-to-face at key moments and these personal encounters clearly provided an important measure of reassurance regarding each side's motives and

intentions, suggesting that for all the gaps in communication, there existed across the four years a bond of trust between them. These meetings also presented them with an opportunity to use joint declarations instrumentally, reassuring the international community that there was no cause to believe in those who feared the proliferation of nuclear weapons in South America. As the COH Briefing Book shows, Alfonsín in particular made it a point to frame the Iguaçu meeting of 1985 as "historic" and marking a "new phase" in the relationship, or to publicly say during the presidential meeting in 1988 that any latent "suspicions" or "arms race" between them was now in the past.

Having secured Sarney's agreement to his proposal to visit the contested dam at Itaipu in a symbolic gesture of reconciliation, Alfonsín made an additional gesture of trust. To this end, he invited Sarney to visit Pilcaniyeu. According to Ricupero in the transcript, 'we knew that we were engaged in a process, and we also used the expression confidence building. So we were fully conscious of it and we always tried to find new ways to reinforce the process'. Once Sarney had accepted the invitation to visit the Argentine nuclear facility, the spirit of reciprocity in their personal relationship required that he extend the same courtesy to Alfonsín, who visited the Brazilian enrichment facility at Aramar in 1986. This Sarney did against the advice of Rex Nazareth, head of the Brazilian National Nuclear Commission and the bridge between the technical nuclear personnel and the military. Nazareth feared that once the train of nuclear cooperation was set in motion, there would be growing pressure for higher levels of transparency. The presidential symbols of rapprochement in the nuclear field filtered down to deeper and more recurrent technical cooperation between the scientists and technicians, including visits to each other's nuclear installations. This was to evolve into a full-blown policy of mutual inspection by the end of the decade.

The Cachimbo Shafts

The existing literature on Argentine-Brazilian nuclear relations has had little to say about Cachimbo, and we believe one of this COH's chief contributions to our collective knowledge is to bring this subject to the surface.[1]

Starting in 1979, Brazil set out to build small-scale research facilities for enrichment technology, some of which would remain secret and out

1. Since completing the COH conference, Mark Hibbs has published an excellent summary of the Cachimbo story in a blog post at Arms Control Wonk, albeit one that does not emphasize the impact of the revelations on the Argentine-Brazilian relationship. See http://hibbs.armscontrolwonk.com/archive/2670/looking-back-at-brazils-boreholes

of the reach of international safeguards. This 'autonomous', ´secret or 'parallel' program, as it soon became dubbed in local parlance, was largely decentralized, with the Army, Navy and Air Force each having their own laboratories, personnel and budgets (Barletta 1997, 1999 and 2000). Brazil's 'parallel' program involved a great deal of international cooperation: purchases of small quantities of highly-enriched uranium from China, the acquisition in Europe of parts and blueprints for the development of Brazilian centrifuges, and a yellowcake-for-oil exchange program with Iraq that provided the core funding for the various Brazilian 'autonomous' activities.[2]

The preparatory interviews we conducted with individuals in Argentina in the run up to the COH meeting suggest that Argentine officials were fully aware that Brazil was seeking indigenous uranium enrichment technologies, but did not find this particularly troubling. On the contrary, time and again we heard from Argentine interviewees that they empathized with the nuclear activities of their Brazilian counterparts. As pointed out above and in the Introduction, both countries were trying to acquire indigenous fuel-cycle capabilities in the face of an ever more restrictive global nonproliferation regime, and as discussed above, each country's decision-makers and officials were reassured by the absence of large-scale industrial-scale nuclear capabilities. However, this picture became temporarily unsettled when, in August 1986, the Brazilian newspaper Folha de São Paulo revealed the discovery of two major shafts in the Serra do Cachimbo site in Northern Brazil. According to the newspaper, the shafts had been drilled by the Air Force as testing sites for nuclear explosions (COH Briefing Book 2012).

As we heard in the course of our informal, preparatory interviews before the COH meeting, Argentine officials and decision-makers were taken aback by the leak. It was not so much that the news reports triggered fears and suspicions as to Brazilian nuclear intentions, or that they prompted doubts in the minds of Argentine officials as to whether they should consider a policy response of any kind. Rather, what caught the Argentine side by surprise was the fact that officials in Brazil would either be carless enough to let sensitive information leak like that or that a Brazilian official would seek to leak the information on purpose. As Ambassador Adolfo Saracho, then in charge of nuclear affairs at the foreign ministry of Argentina told the meeting, the Brazilian government moved quickly after the revelations to hand an non-paper to their Argentine counterparts explaining that the boreholes were no more than repositories for nuclear waste like the ones Argentina had built in the Patagonia region. As Saracho said, 'relations were at a very good moment at the time and we did not ask for more [reassurances] than that'.

At the COH meeting, Ornstein recalls how he felt at the time – the revelations 'caused some bewilderment'. He tells the group that some people in Argentina may have reasoned that the holes might be used in an undetermined future for nuclear

2. For a detailed account see the collection of electronic dossiers prepared by the FGV team on Brazil's Nuclear History at NPIHP Research Updates http://www.wilsoncenter.org/publication-series/npihp-research-updates

testing, but 'there was no indication that Brazil was about to conduct a nuclear test. It was as if someone had take an early steps, almost, perhaps, a local initiative from one of the Armed Forces or a group, or something like that […] It didn't provoke, to be honest, any major concern'. According to the memories of the Argentine participants, the Alfonsín administration decided that to make a public fuss about the Cachimbo revelations would be counterproductive. The fact that the Argentine authorities chose not to let these revelations derail nuclear rapprochement shows their commitment to the process. This finding is particularly important in that it contrasts with the tenor of the discussion at the workshop held in Israel in 1996 between international experts and Argentine-Brazilian policy-makers, when the argument went unchallenged that the Cachimbo revelations were a serious source of concern not only to officials but also to the scientific communities on both sides (Albright and O'Neill 1996).

Less than a year after the Cachimbo story leaked to the press, the Brazilian government announced that it had finally developed indigenous technology for low-enriched uranium. Before going public with the news, however, President Sarney made it a point to inform President Alfonsín of the impeding news through a trusted personal envoy, Ambassador Rubens Ricupero. As Ricupero said at the COH meeting, 'The idea was precisely to reinforce the building of confidence with an additional step, to avoid by all possible means that the news would be disseminated before being communicated in that special and privileged way to President Alfonsín'. Sarney's commitment to informing Alfonsín through his trusted intermediary reciprocated Argentina's earlier gesture in relation to the Pilcaniyeu plant. Sarney's empathy in this regard showed the mutual respect and trust between the two leaders.

What is also revealed in Ricupero's testimony is that Brazil's announcement of an enrichment capability three years after Argentina's own announcement had a positive impact on bilateral cooperation because it leveled the field. Prior to this balance, Ricupero noted, it was 'very difficult to persuade the recalcitrant sector [Brazilian nuclear establishment] to move forward. [Now] it was as if we had tied the game. With the game tied, no one was ahead of anyone; it would be easier than before to freeze the situation'. The transcript shows that the witnesses believed that this leveling of the 'field' was a precondition for the system of mutual inspections that was to follow.

Concluding thoughts

What emerges from the three junctures that we have selected from the transcript is that there were moments when it is plausible to imagine less cooperative trajectories for the Argentine-Brazilian nuclear relationship. The Argentinean government chose to respond to Brazil's decision to build the Itaipu dam at the expense of Argentine protestations not by upping the ante, but by send-

ing Ambassador Camilión to Brasília to negotiate a settlement instead. There were many voices in Buenos Aires arguing for a different course. Also, the revelations of Pilcaniyeu and Cachimbo did not trigger security dilemma dynamics, but it is fascinating to reflect on whether this would have been the case had the technological breakthroughs heralded the beginnings of nuclear industrial scale development on both sides. In all three cases, we have drawn attention to the role of interpersonal dynamics of empathy and trust at the highest levels of Argentine-Brazil diplomacy. What Mikhail Gorbachev once called the 'human factor' (quoted in Chernyaev 2000: 142-3) dampened down competitive tendencies on the part of both states.

To be sure, there were powerful structural factors – both ideational and material – promoting cooperation and not conflict. The transition to democracy was not a precondition for cooperation, but it was an important stimulant to it, and it was important that the two states achieved their enrichment breakthroughs at a time when both countries were undergoing democratic transitions. A further structural factor promoting cooperation was the determination of the Argentine and Brazilian governments not to be cowed by US pressure to conform to global non-proliferation norms. But as the Introduction has shown, the US government also served a more positive role in encouraging the pursuit of a new nuclear dialogue between the two countries and in helping them meet the attendant costs of engaging in a joint program of mutual controls.

Also, our conclusion broadly supports the notion that 'the budding Southern Cone nuclear regime was more a symptom than a cause of the growing trust between the two states' (Hymans 2014: 372). Interpersonal trust at the highest levels of the two governments was critical at key junctures like Itaipu, Cachimbo and Pilcaniyeu in advancing the policy of nuclear rapprochement and this built up momentum for the set of bilateral nuclear agreements that resulted. But differently from Hymans, we find that nothing about this dynamics was obvious or preordained. What the transcript shows is that key actors on both sides chose to cooperate despite forces pushing in the opposite direction, further deepening and broadening their existing stock of mutual trust. The COH meeting highlighted the degree to which major players were tested at the time, and what is so heartening about the narrative that emerges from the transcript is that in the face of doubts and uncertainty, they chose to trust rather than distrust.

It is tempting to dismiss their attitude as the natural path to take; after all, neither side was seriously working towards enriching vast quantities of uranium at bomb level or working on related weaponization programs to warrant a policy based on deeply-rooted suspicion. As participants of the 1998 workshop that brought together decision makers from both countries in Los Alamos National Laboratory put it, 'cooperation was possible because Argentine and Brazilian security concerns about each other were never overriding' (Doyle, 1999: 4). And yet, the most cursory glance at the secret telegrams of the time suffice to show that in choosing to trust, Argentine and Brazilian leaders were not following a preordained pathway and their decision to trust the other side

was not without risk or cost. If the diplomacy of mutual inspections that followed was successful in producing a concept of 'neighbors watching neighbors', it was because there were foundations to rapprochement that went far beyond mutual hedging against future nuclear intentions. The transcript below speaks to the role of interpersonal trust in making possible the inspections regime, even if that regime served, in turn, as a safeguard against future Argentine and Brazilian leaders, and their governments, embarking on a different nuclear course.

The question that remains for future study is whether the lessons that we have drawn out from the transcript as to the origins and dynamics of Argentine-Brazilian nuclear cooperation have applicability elsewhere where enmity and not rivalry is the defining characteristic of nuclear relationships.

Transcript of the Critical Oral History Conference

'The Origins of Nuclear Cooperation between Brazil and Argentina'

Rio de Janeiro, 21-23 march 2012

Welcome and Introductory Remarks

Matias Spektor:

Good morning, everyone. Welcome to Rio de Janeiro. It is a great honor to have you here with us for this historic meeting. This is not a traditional academic conference where experts presents and discuss their papers, but rather a *critical oral history*: a structured, collective interview that brings together historical actors and experts to discuss the historical record in detail.

PRESIDENTS ALFONSÍN AND SARNEY

We are thrilled that you have accepted our invitation to join us. It is unlikely that this group will meet in the same format again, so we have a unique opportunity to explore the story behind the Argentine-Brazilian nuclear *rapprochement* that draws both on personal recollections and the critical analysis of newly-declassified documents. With this in view, we would like to ask you to be as precise as possible when describing events. Our goal is to produce a wealth of fine-grained material to facilitate the future work of historians and political scientists.

Nicholas J. Wheeler:

I should like to start by echoing Matias's welcome. It is a huge pleasure to see you all here. Back in 2008 I had the idea of applying the methodology of *Critical Oral History* to Argentina-Brazil nuclear issues. I was then starting my project on 'The Challenges to Trust-Building in Nuclear Worlds'. I wanted to explore the role of trust in the establishment of cooperation between states that possess nuclear weapons and those that seek to acquire them.[1]

The methodology of *critical oral history* has previously been applied to situations where governments were involved in crises, competition in the field of security, and even in wars. The idea behind this method is to lead the partici-

pants to discuss what went wrong, what were the mistaken perceptions or misunderstandings involved, and how dangerous situations that arose could have been avoided through increased empathy.

However, it seemed to me that it would be very interesting to apply this approach to the Argentine-Brazilian case because this is a success story: a situation in which nuclear rivalry and competition was averted and a different path was chosen. By bringing this group together around the table, we may be able to understand how this relationship evolved the way it did and also find out whether there are potentially useful lessons for other situations. I am very happy to be here and for the opportunity to explore these questions with you all.

Moderator (Dr Matias Spektor).

Let us start with a round of introductions.

Roberto Ornstein:

At the outset, I would like to express my deep satisfaction at being asked to participate in this meeting and contribute to shedding light on the very important relationship that was established between the two countries in the nuclear field. I come from the Argentine Navy. I am a retired naval Captain. In 1979 I joined the National Atomic Energy Commission (CNEA) on account of my interest in international relations. Before that I participated in the negotiation of the Treaty of Tlatelolco as military adviser to the Argentine delegation. I was lucky to share that occasion with Ambassador Adolfo Saracho who is here with us today, and who was beginning his diplomatic career back then. Between 1979 and 1994 I was deputy Governor for Argentina at the International Atomic Energy Agency (IAEA), where I had the chance to meet many of our Brazilian colleagues, and many others that are not here today.

Since 1979 –33 years ago – I have been in one way or another linked to cooperation between Argentina and Brazil in the nuclear field. Therefore, this is an

issue that deeply interests me. Even if I was not connected with nuclear matters before 1979 I am a real bookworm and collect all loose papers. This allowed me to put together a very important private archive that I believe was a very relevant contribution to the search for documents that you carried out. At present I have no managerial duties. I am an adviser to CNEA, but I still follow all IAEA issues and those relating to cooperation with Brazil.

Luiz Augusto de Castro Neves:

I am a retired ambassador and the current president of the Brazilian Center for International Relations (CEBRI). My involvement with nuclear energy started in 1978, when I worked at the Division of Energy and Mineral Resources that had just been established at the Brazilian foreign ministry (Itamaraty). I worked in that Division until 1981 and for this reason I participated in the first nuclear cooperation agreement between Brazil and Argentina (1980). By the way, I had the opportunity to donate to FGV the manuscript of that agreement, still written in pencil, which was drafted by then counselor Raúl Estrada Oyuela from the Argentine Embassy and by myself.

In 1981 I was appointed by Itamaraty to serve at the General Secretariat of the National Security Council (CSN) where I was involved in nuclear matters. These encompassed not only the agreements between Brazil and the United States and those with Germany, but also the so-called "autonomous" program, which probably will be the subject of much discussion here. I stayed at the CSN until 1987. Years later, at the end of 1992, I was appointed Executive Secretary of the Secretariat for Strategic Affairs (SAE) of the Presidency of the Republic, which had inherited some of the duties assigned to the old, now extinct CSN. In that position I also was entrusted to a certain degree with the supervision of the activities of the National Nuclear Energy Commission (CNEN) and Brazilian Nuclear Industries (INB).

In 1995 I was appointed General Director of the Department of the Americas at the Brazilian foreign ministry. My relationship with Argentina became

more comprehensive. My opposite numbers in that country were Ambassador Juan José Uranga and later Ambassador Alfredo Chiaradia. After that I was for some time Deputy Secretary-General of Itamaraty and served as Ambassador to Paraguay, China and Japan.

I consider it a privilege to have been included in this very select group to study the background of nuclear cooperation between Brazil and Argentina. And I must say with some excitement that when I saw some of the documents that were distributed for this meeting, texts that I drafted over thirty years ago – I felt some trepidation before reading them… to see what nonsense I might have written at that time… but, well, I believe I should not feel too embarrassed (laughs).

Sebastião do Rego Barros:

I am a retired Brazilian ambassador and my involvement with nuclear issues started around the close of the 1970's and beginning of the 1980's. Until then I dealt mainly with economic matters. But I started working for Foreign Minister Azeredo da Silveira just when Jimmy Carter's administration was starting off, and what was then a very distant question to me became quite close. Later on I ended up representing Brazil at the *Plutonium Storage Group*. Regarding Brazil and Argentina, I always believed and still do that understanding between them is of the utmost importance.

Luiz Felipe Lampreia:

I currently teach International Relations at ESPM, a university here in Rio, and I am also a retired Brazilian ambassador. Although I was never a nuclear negotiator I was very close to these issues because of my involvement in a critical period, basically 1975 and 1985, when we not only had the nuclear challenge but also the Itaipu question, which was probably sharper and more clearly perceived as standing at the core of the contentious issues in our relations with Argentina.[2] I participated in these events as adviser to Foreign Minister Silveira

on economic affairs and as spokesman for the ministry. Itaipu and the nuclear file are deeply intertwined and I believe there were some elements that could have led to a serious distancing between Brazil and Argentina. It is of course difficult to foresee how things could have evolved. But in both countries the bureaucracies and the military establishments were very much inclined toward an antagonistic relationship. Our military had been trained under the idea that the most likely war scenario came from Argentina, the so-called Beta Plan.[3] Brazilian diplomats also saw Argentina as the main competitor for prestige and influence in Latin America. There was, therefore, fertile ground for contentious disagreements to get out of control.

Fortunately, both the governments and the societies saw light before escalation occurred and realized that it would be extremely stupid to take disagreement too far. We found a way to make our hydroelectric and nuclear programs compatible. While this is a great success story, at the time it was not possible to be sure whether the result would be a happy one. All ingredients were present for an undesirable outcome.

Adolfo Saracho:

Good morning. I am a retired Argentine ambassador, and I am grateful to the organizers who convened this meeting. I started working with Brazil in Tlatelolco in 1967 when I was a young diplomat trying to chart joint strategies with my Brazilian colleagues in the face of pressures coming from the United States, but expressed through Mexico. At the time we established a common position that was extended in time, by which neither Brazil nor Argentina accepted the limitations that others were attempting to impose on us. As Captain Ornstein has aptly expressed, I had the pleasure and the honor to work with him in his capacity as advisor to the Armed Forces.

Afterwards I always worked at the Argentine Ministry of Foreign Affairs. As a member of the Directorate for International Organization at the Foreign Ministry I was sent to the meetings of CNEA where questions of Argentine foreign

policy were decided and, so to speak, the Ministry of Foreign Affairs endorsed. At the time the foreign ministry's opinion did not have a determining weight. This situation prevailed for many years. However, when President Alfonsín took office (1983) things changed: the civilian administration was responsible for nuclear issues and any kind of relations with foreign countries in this field, and particularly with Brazil, were to be implemented from the Ministry of Foreign Affairs.

Even before Alfonsín's inauguration I was invited to set up the National Directorate for Nuclear and Disarmament Affairs (DIGAN) within the Foreign Ministry. I had meetings with then Secretary of State Jorge F. Sabato before Alfonsín took office and we started to work in order to improve and optimize the nuclear relationship with Brazil.[4]

From February 1984 nuclear issues were decided at the Ministry of Foreign Affairs - always in consultation with CNEA. We also started a very interesting program to train diplomats on the technical side of nuclear science. We did this in cooperation with INVAP.[5] It was a very important initiative for nurturing new talent. Many of them now hold important positions in several areas, so much so that the current director of DIGAN, as well as some staff members at IAEA, are the product of that effort.

Reading the Argentine documents selected for our exercise it is clear that we promoted to the maximum extent the nuclear relation with Brazil, and I am happy to see this. Somehow this attitude continues to this day. I am today part of NPSGlobal, a foundation that keeps up dialogue with Brazil on nuclear issues. Once again I thank you for this exercise that I believe will be very useful to shed light on the Argentina-Brazil relationship and I am at your service here.

Oscar Camilión:

Naturally I want to thank the organizers. My participation, rather than specifically as someone who is familiar with the matter, is centered in the bilateral

Argentine-Brazilian relationship which as ambassador Lampreia aptly put, developed in a context of mistrust.

My first contact with Brazil started in the late 1950s when I was appointed minister-counselor of the Argentine Embassy in Rio de Janeiro. At that time a mechanism of rapprochement was developed almost immediately on the initiative of the two presidents. I cannot fail to mention the important Brazilian officials who contributed to this objective, such as the distinguished interlocutors from Itamaraty Augusto Frederico Schmidt, Mario Gibson Barbosa, and Paulo Nogueira Batista. The latter was very much linked to nuclear matters.

Fundamentally the problem then was that we wanted to establish *rapprochement* between Brazil and Argentina in a framework of mutual confidence. At the time a deep confidence gap about the objectives of the other part was prevalent and this generated a particularly deep lack of trust among policy makers.

I was able to intervene more directly in these issues when I was appointed Ambassador to Brazil in 1976, in the midst of the Itaipu crisis. I recall that at some point Ambassador João Hermes Pereira de Araújo mentioned to me that the negotiation about Itaipu had been the most difficult for Brazil in the 20th century.

Indeed it was a very complex negotiation, basically grounded on emotional motivations deeply felt by both parties. Emotional reasons are, as you know, a fundamental part of all kinds of inter-personal relations. It was necessary to create a relationship of trust. It was a very difficult negotiation that fortunately had a positive outcome.

But somehow the most significant issue was the nuclear question since it had a special relevance because, ultimately, nuclear non-proliferation was a central objective of the big powers. This was not an abstract question: there was no concern about nuclear proliferation in Colombia, in Central America or in sub-Saharan Africa. But there was indeed concern with regard to four or five

cases in the world: South Africa, India, Pakistan, the Middle East.

Brazil and Argentina were a still pending case since both countries had developed significant nuclear facilities and there was a prospect of eventual diversion from peaceful uses of nuclear energy for non-peaceful ones. That was the reality. So, when the two countries started to talk to each other about nuclear matters there was much interest. When the first signs that this constituted an area for cooperation appeared I believe there was much enthusiasm in the nuclear community worldwide.

I must once again express my thanks for the possibility of participate in an event of this kind and stress the great significance I attach to the chance to meet again old friends whom for a long time I had wished to see. Thank you.

John Tirman:

I am John Tirman from the Massachusetts Institute of Technology (MIT) and it is a pleasure to be here. I should like to make a comment about how these conferences work. This is my sixth Critical Oral History Conference, some of which I organized and I believe that this one is valuable, among other things, because of its will to reflect on such events in an empirical manner, not only describing what happened in these cases but also why it happened and what were the sensitivities, what were the feelings with regard to the other party about the policy in your countries, what were the pressures that led you to take certain kinds of decisions. This is indeed the value that we could not derive from a traditional historical treatment.

You know that the freedom to speak at length is one of the great advantages of this format and I would like to close with a little anecdote of my first conference in Critical Oral History that happened twenty years ago in Havana, about the Cuban Missile Crisis. We were not sure whether Fidel Castro would show up for the meeting but he did and stayed for the whole duration. He came in a little late, introduced himself, sat down and interrupted a Russian general who

had been the commander of the Soviet forces in Cuba and was just finishing a very alarming comment. Finally someone asked Fidel what he thought of what the general had said. The answer lasted for one hour fifteen minutes but was fascinating. I would not encourage one hour and fifteen minute-long answers, but I think it is worthwhile to reflect at length, if you can, on what happened, and most important, on why. This will make this meeting a success[6]

Andrew Hurrell:

I teach International Relations at Oxford and work mainly on questions of international law, international institutions, and global justice. Coming to this meeting I realized that I started to develop a professional academic interest for Brazil and its international relations and of course the specific relationship with Argentina was one of the most important events of this period. Also 17 or 18 years ago I was involved in a project of comparative analysis of the rise of security communities in several parts of the world and wrote the chapter about Brazil and Argentina, which was indeed my first attempt at understanding what was going on.[7]

So one of my greatest personal hopes is essentially to revisit some of these questions – the notion of overcoming conflict, the genesis of trust and the unthinkable character of certain kinds of relationships. But obviously this time I hope to be able to understand such questions with much deeper documental evidence and the contribution of those who participated not only in the decisions but, as John said, also reflecting on the content of the thinking, the ideas that informed the decisions they took as part of this process.

Rodrigo Mallea:

Good morning, everyone. I work as a researcher at the Center for International Relations of FGV here in Rio de Janeiro and I hold a masters degree in Political Science from the Institute of Social and Political Studies of the University of Rio de Janeiro (IESP/UERJ). In the last few years my studies focused on Ar-

gentine-Brazilian nuclear relations, which I have worked along with Professors Matias Spektor and Nicholas Wheeler, both in the selection of documents and by having participated actively in a series of interviews that we carried out with the main protagonists of this process in both countries. The main results of our findings appear in my MA dissertation, "The Nuclear Question in Argentine-Brazilian Relations (1968-1984).[8] Considering both nuclear questions and the singularity of Argentine-Brazilian nuclear relations to be fascinating matters, I have to say that I´m very delighted to be here with all of you. I am sure that the results of this exercise will be extremely positive and will leave valuable lessons to anyone who studies nuclear history as well those interested in Argentine-Brazilian relations.

Carlo Patti:

I am a member of the research nucleus on the history of the Brazilian nuclear program and of the nuclear cooperation between Brazil and Argentina. I have just finished a doctorate on the role of Brazil in the global nuclear order.[9] It is a great privilege to be among you today. I understand that this exercise will be fundamental for future studies on the Argentine-Brazilian nuclear history.

Panel I

Argentine-Brazilian rivalry, Itaipu, and the role of the United States (1967-1979)

This panel reviews the first Argentine-Brazilian attempts at negotiating a nuclear cooperation agreement. Chronologically it covers the long period between 1967 and 1979, the years that coincide with the height of rivalry about the use of the international waters of the Paraná River. Participants also discuss the role on Brazil-Argentina nuclear relations of the Carter administration, whose policy of nuclear non-proliferation applied unprecedented pressure on both countries.

PRESIDENT ERNESTO GEISEL MEETS HIS CABINET IN BRASÍLIA

Moderator:

We would like to start by asking the participants to offer their thoughts on the impact on Argentine-Brazilian nuclear relations of Brazil's decision to build the Itaipu Dam on the Paraná River basin in the late 1960s.

Camilión:

I believe it is important to start with some reflections on the question of perceptions. I would say that there are many possible forms of perception, but those that interest me are three: *subjective perception*, in which the other is perceived as devoid of humanity; *objective perception*, in which the concrete facts and their consequences regarding security are adjusted; and *paranoid perception*.

For a long time in Argentina something called the "Pampa Plan" existed. It consisted fundamentally in avoiding an eventual occupation by Brazil and led to a policy of not building roads along the Argentine littoral.[10] This started to change only with President Frondizi's administration (1958-62) and civil works in the province of Corrientes. The construction of a bridge over the

AZEREDO DA SILVEIRA AND
HENRY KISSINGER, APRIL 1974

Paraná river and of the tunnel under the same river was the result of the joint work of two provinces, Santa Fe and Entre Rios, which struck an agreement to build those links while the national government still harbored some mistrust.

In this connection I should say that some sectors in Argentina, particularly the military, perceived Brazil as a threat, mainly because of its size. At the same time, when I first went to Brazil, in 1959, the relationship in the size of the two countries was much different from what it is today. Brazilian GDP was 1.3 times the Argentine, but the population ratio was approximately 3.5 to 1. Argentine *per capita* GDP was then 3.5 times that of Brazil. So Argentina had a much larger margin than Brazil to arm itself as a consequence of the income per inhabitant. This made Brazil perceive Argentina as a potential threat to its security since Argentina could progress militarily more than Brazil despite the latter's numeric superiority. Hence the instructions from Foreign Minister Macedo Soares to Ambassador to Argentina Aguinaldo Boulitreau Fragoso at the start of the 1960's reminding him that Argentina was a threat to Brazil. There was a problem of perception on both sides that led to possibly mistaken decisions, such as not building roads in one of the two countries.

The nuclear question comes under that perspective. I believe it is likely that some actors in the Argentine nuclear policy may have contemplated nuclear development as a possible opening into areas that would permit a military balance in view of the difference of population regarding Brazil. We must also consider the question of Itaipu in this context. Itaipu was so emotional and so hard to understand inasmuch as it was not a simple sum of hydroelectric projects that should be technically coordinated. In reality it was a big political issue because in a certain sense it was also a question of boundaries, a territorial question, not only because of the charting of the border but because of control over the area. For this reason, once that problem was overcome, no further security questions remained between Brazil and Argentina.

The nuclear questions should therefore also be understood in some sense also under this aspect, not only because all our countries must progress technologi-

cally in order to be up to date at the level of international relations. Obviously this does not prevent some to have "paranoid visions" about the potential intentions of their neighbors. There is no better example of the paranoid vision than the idea that Itaipu could become a "water bomb". But the fact that this has been raised as a real possibility by seemingly serious people who had some influence shows once again that the problem of perceptions is more important than reality itself.

Moderator:

Ambassador Lampreia, in what way did the question of Corpus-Itaipu affect the nuclear relationship of Brazil and Argentina, and what was the role of the Brazil-Germany nuclear agreement of June 1975 in that context?

Lampreia:

I believe that undoubtedly the period between 1965 and 1975 was crucial because in the 1960's there was a concern to look for a nuclear cooperation agreement and both Brazil and Argentina had adopted an intransigent attitude toward the Treaty on the Non-proliferation of Nuclear Weapons (NPT). When the question of Itaipu arose later on, in the 1970's, and construction of the dam started in accordance with a previous agreement with Argentina, there was a feeling, at least from the Argentine side, that the plant constituted a real threat to Argentine economic development. First, as a Brazilian-Paraguayan measure that neutralized the possibility of the construction of the Corpus hydroelectric plant and second as a dam that could cause dominance over the downstream waters to the point of making the level of the river variable and thereby create problems for the Argentine ports along the course of the stream. There were even some crazier scenarios such as the one of the atomic water bomb that would be caused by the permanent opening of the dam floodgates in order to inundate the Argentine plains of the Plata River. The mere existence of this theory already demonstrates that there was a climate of almost paranoid tension, right? At the same time Brazil considered that the Argentine position

to prevent the construction of Itaipu was almost a *casus belli* because the plant was supposed to provide at that time about 30% of Brazilian energy. There was a very concrete interest [on both sides].

AZEREDO DA SILVEIRA AND WEST GERMAN FOREIGN MINISTER GENSCHER SIGN NUCLEAR AGREEMENT IN 1975

It was precisely then that Oscar Camilión came to Brazil in May 1976 and met with a classic posture of military regimes to keep secrets, not to talk about issues. And Oscar, who is a charmer, a marvelous juggler of words, seduced the Brazilian press thoroughly and everywhere one could see the Camilión fingerprint that conquered the Brazilian media during at least one year after his arrival. Foreign Minister Azeredo da Silveira was naturally very annoyed with this and decided to replace his press secretary, asking me to take the job. The was an interesting moment then because the editors of *Jornal do Brasil*, which was then the most important newspaper with Carlos Castello Branco and many other distinguished journalists, decided to organize a dinner party with sixty or seventy newspapermen, Oscar and myself. Only a boxing ring was missing for Oscar and I to have a fight (laughs). And he and I, who had no interest in a wrestling match in the presence of journalists, much to the contrary, kept talking about soccer, about Boca Juniors, about Nelinho's powerful kick, about the strength of the fists of Carlos Monzón, who was then the Argentine world heavyweight champion. Everyone was very disappointed but since then we became very good friends.

I believe that from then on the climate of public frenzy, public rivalry and quarreling started to be somewhat dispelled. A Buenos Aires newspaper that was controlled by the Armed Forces printed daily the most aggressive things about Brazil. The environment was very negative. And within this question naturally the nuclear issue came up more strongly than before.

In Brazil there was the awareness that Argentina had an advantage because it had started first in this technological race (it had the Atucha reactor that used the heavy water technology). Brazil in fact did not have anything because the only reactor it was trying to put together was the one from Westinghouse here at Angra and it came out like a firefly, a plant that kept blinking on and off all

the time. There was a feeling that Argentina had an edge and this had an important strategic impact. For this reason I believe that at the end of the 1970's we came to a delicate moment. The Americans, as could be clearly seen during the visit of Cyrus Vance and Warren Christopher, exploited a line of provocation with Argentina to force Brazil to sign the NPT.[11] They schemed to sow discord between Brazil and Argentina and sought to manipulate the rivalry to their own benefit. Fortunately this was aborted.[12]

I entirely agree with what Oscar just said about Araújo Castro, mentioning that the Itaipu negotiation was the most difficult for Brazil in the 20th century, because it was not only Brazil and Argentina, there was also Paraguay, which added a serious complication. It was a strategic situation that could have gone awry.

Camilión:

I want first to thank my friend Ambassador Lampreia for his cordial remarks which if on the one hand reflect the truth, also allow me to make some additional reflections about the reasons why an agreement was reached between Brazil and Argentina on an issue that represented an obstacle to the whole bilateral relationship and amounted to a roadblock. What happened was that before the start of the final negotiations on Itaipu the question was articulated by both Chanceries on the basis of extreme ideological positions that created a situation of absolute incompatibility to arrive at an agreement. For instance, the principle of "prior consultation": is there a principle to consult or not, to be understood as a statement in international forums? I believe that this was a strategic mistake by Argentina which was corrected when an attempt to find a solution was carried out in Brazil. And that attempt also coincided with the Brazilian position in favor of finding a solution to that serious diplomatic problem by fulfilling the minimum objectives of each of the parties. If we seek maximum goals we will never find a solution for the negotiation. If we can set minimum objectives we will surely find the possibility of a solution that supposes, among other things, the recognition that all the emotional and mytho-

logical elements around the issue are not true concrete national interests.

I shall deal now with something that was put to us in the questions asked up to this point: what was the impact in the two countries of the visit by Warren Christopher and later by Cyrus Vance? This is a very important element that must be taken into account. When Vance arrived in Brasília bringing with him what was in practice an ultimatum from President Carter, I was heading the embassy and could witness what, in my view, was a huge surprise in many sectors of the Brazilian political, diplomatic and even military leadership. At that moment we were very far from the time when a Brazilian Foreign Minister said that what is good for the United States is good for Brazil, as Juracy Magalhães had stated. There was a great Brazilian objective that the United States deemed radically contrary to its interests and that they were willing to oppose: the German-Brazilian 1975 agreement.

In Argentina that agreement did not cause much surprise: it was compatible with Brazilian aspirations. In fact, Argentina had its own successful agreement with Germany.[13] The agreement with Brazil was much more extensive: eight 1.350mW plants, as well as all the other elements that made up a uranium enrichment facility. I had the opportunity to avail myself of a newspaper interview to say, as the echoes of Cyrus Vance's demands were in full reverberation, that Argentina did not foresee any military objective in the German-Brazilian agreement. This caused much surprise, including at Itamaraty, where the origin of this spontaneous statement was unknown.[14] I also add that the spontaneous manifestation also surprised Buenos Aires. If in Buenos Aires the Argentine government and its Ministry of Foreign Affairs believed that the United States were going to put a stop to the Brazilian nuclear efforts and leave Argentina to monopolize nuclear policy in Latin America, they were completely wrong. It is worthwhile to recall this question because it gave rise to some very interesting debates, also about bilateral cooperation between the two countries. Moreover, regarding the immediate possibilities for cooperation, the Argentine embassy in Brazil started indeed to move in connection with the technical sectors of

CNEA.

I also had the opportunity to invite Captain Castro Madero and Ambassador Paulo Nogueira Batista, President of Nuclebrás, for a meeting. At a meal with them the issue of the nuclear programs was extensive dealt with, not yet regarding prospects of possible Argentine-Brazilian cooperation, but with an analysis of the situation of both programs. At that time Captain Castro Madero said very seriously to Ambassador Nogueira Batista, a good friend of mine, that from the technical point of view he was worried about the program agreed between Brazil and Germany because he knew of the previous German difficulties with its first plan for a 750mW plant. He believed it would be very difficult to build a 1350mW plant without having carried out any prior tests. He also mentioned in detail some of the problems he foresaw for the development of that part of the program.

I put this to you as a demonstration of the goodwill and constructive spirit between the two highest officials responsible for the nuclear programs of the two countries. The atmosphere [of cooperation] started to be created in the nuclear establishments, as surely Captain Ornstein can corroborate. These are the issues that I believe are useful to mention in order to show that everything is closely intertwined and how important it is, above all, to give up maximum, unreachable goals and seek minimum objectives likely to be reached, even if the latter are not totally satisfactory: put aside extreme positions and sectors in order to make possible the prospect of cooperation based on a global strategic vision.

I shall mention something quite well known with regard to negotiations of this kind, but which was very important as a key factor in the approach of the two Chanceries. In 1957, when President Arturo Frondizi was preparing the main guidelines of his foreign policy, which sought a rapprochement with Brazil and Chile, Helio Jaguaribe wrote his famous book, *O nacionalismo na atualidade brasileira*, arguing in favor of the strategic friendship with a concrete objective: to prepare Brazil for the defense of its central strategic interests, not from Ar-

gentina, but from the United States.[15] This truly luminous and prophetic book is worth a re-reading in order to understand the reason why, once there was a theoretical frame, it was possible to go forward with much greater effectiveness toward the solution of the problems between the two countries – some imagined and others concrete.

Moderator:

Captain Ornstein, in what way would you say that the context of regional rivalry and emotionalism in both countries affected the technical sectors?

Ornstein:

Well, I would like to use a somewhat different approach that is not contrary to what the distinguished ambassadors have said, but that offers another viewpoint. As much as I could perceive in my 33 years working on this issue and given all the documentation and my personal contacts there was never at CNEA a rivalry with CNEN that could not be described, shall I say, as similar to that existing in sports. The most glaring fact was the race in which we were engaged, not to arrive at an atom bomb, but to have the first operational research reactor in Latin America. I shall disclose a fact that may seem as betraying a secret: Argentina won that race by a few days because it inaugurated the reactor without having finished testing it.[16] But deep inside there had always been some competition throughout the history of our relations in the nuclear field and we never had ill feelings toward the agreement of Brazil and Germany. It seemed logical to us that Brazil would make an effort of that magnitude since in fact it was a little behind with respect to the development that Argentina had attained in that field. But I would say that this situation was satisfactory to us.

Now I want to draw a distinction with regard to the diplomatic sectors, which are always at the combat front *vis-à-vis* others. I believe that many of the conflicts that took place between Argentina and Brazil since the 1820 war of the Empire of Brazil against the United Provinces of Rio de la Plata, except in

the case of Itaipu – during those years I worked in the study of the technical-economic viability of the Corpus dam and for this reason I followed it closely – were in fact very small. I would say that the main distrust between the two countries was rather at the political-diplomatic level and at some military sector but did not affect the population or other activities, much less the nuclear area. By reading the documentation that our friends the organizers carefully selected it can be seen that on both sides there was always good disposition at the technical level and a desire to cooperate with the other party. Diplomats from one and the other side were never opposed to each other; what they did was to play with the possibility of reaching an agreement, particularly when Itaipu became a roadblock. This can be seen in the notes from both Chanceries. No one is against cooperation, but diplomats always sought to arrive at agreements in strategic fields, such as the nuclear area, as exchange currency and negotiation. For this reason I believe that the perception of the diplomats – who, I admit, were at the political battlefront in the day-to-day relationship – was perhaps somewhat more exacerbated than that of others, who were at different places.

As a former member of the armed forces I am going to make a confession: the choice of a specific war hypothesis is one of the ways by which the armed forces can justify their existence, its equipment and its budget. Argentina had a much more complicated war hypothesis: to fight Brazil and Chile at the same time. We started from the principle that Chile would take advantage of a war between Argentina and Brazil to recover the territories occupied by Argentina in Patagonia. And I am going to make another disclosure. During a war exercise at the Navy War College, when I was already an officer at the commanding level, was assigned as the commander of the Brazilian fleet charged with sinking the whole Argentine Navy. But what other war hypothesis could we have: a war against Uruguay?

What I am saying may come as a shock for some of you, but in all candor, having been a member of the armed forces for 35 years and 33 at the CNEA, all the conditions for a nuclear understanding were given, with the exception of

that roadblock which, as ambassador Camilión has said, was more a question of exacerbated feelings than a real conflict of interests. At that time Argentina exaggerated in its position and Brazil also exaggerated by hardening the negotiation. As a negotiating principle, the two positions can be seen as valid. Once that episode was overcome – and I also agree with ambassador Lampreia that this was the most important trap in the bilateral relationship and also the most fruitful of all negotiations between Argentina and Brazil – it became much easier to realize nuclear cooperation. I do not want to go much further yet, but I would say that there was this particular circumstance: the two sectors most interested in cooperation were the technical ones. The political-diplomatic sectors were those that somehow delayed the cooperation. However, when agreement was reached, those sectors were the ones that showed the best integration and coordinated best their activities, while those that had more difficulty in engaging in effective cooperation, for a number of details that I shall later examine more deeply, were the technical circles. With all frankness, only now are we beginning to attain cooperation, not knowing yet its real effectiveness. But I do not wish to anticipate events. Thank you.

CYRUS VANCE AND AZEREDO DA SILVEIRA MEET IN BRASILIA

Moderator:

We would like to come back to the question of Itaipu. What factors prevented a further escalation of the dispute? Was there a role for interpersonal relations?

Castro Neves:

My perception is that in fact the personalities involved may have contributed to delay a little the technical cooperation agreement that basically regarded the level of Itaipu and that of Corpus in order to make both compatible so that the waters from one did not flood the turbine chambers of the other. The agreement was being negotiated during the administration of President Geisel and Foreign Minister Azeredo da Silveira. The essence of that agreement was practically ready by the end of the administration. However, at some point, a decision was made to leave the final solution of the issue to the Figueiredo

government that started in 1979.[17]

We had already had a less than positive experience in this connection, the agreement made by Foreign Minister Gibson Barboza with Eduardo McLoughlin, the so-called New York agreement on exchange of information, in 1973.[18] The agreement was concluded at the end of the Lanusse government, but the first measure of the Cámpora administration was to denounce it. My impression is that the Argentine side itself had more or less in mind to conclude the agreement with the new Brazilian government in order to make it more sustainable. But the gist of the agreement was ready. We even had established some common parameters because the regime of the waters of the Paraná River was not known precisely so as to permit establishing things like the variation of area waters or the speed of the variation. By the end we were discussing the interval of 50 centimeters when we came to the conclusion that the margin of error was of 50 centimeters. So there was not much to say. President Figueiredo took office on March 15 1979 and in the beginning of October the agreement between the two parties was formally signed, basically the agreement that had been negotiated by the previous government.

Ornstein:

I think that the biggest delay besides the one you have just pointed out and that seems perfectly logical to me is the one mentioned by Ambassador Camilión: the Argentine position was in fact extreme, pushed by some very nationalistic sectors that wanted to consider valid a maximum rise of the river, something that happens once in ten thousand years, as if it were a sovereign right, when in international law the medium rise is used and never an extraordinary flooding. So, when Argentina had to accept to withdraw that demand, it had to go the other extreme, which is a major mistake in negotiating techniques. This happened to us in the Plata River treaty and also in several negotiations with Chile – having a very demanding and unsustainable position.[19] Therefore, I believe that the extremely exigent diplomatic position that Argentina held in its foreign policy, and the fact that it was validated by the new government,

were important factors that delayed the signing of a nuclear agreement, which after all was already negotiated between the two parties. But it was necessary to conciliate very extreme positions.

Camilión:

It is true that the Itaipu negotiation was already concluded at the end of the Geisel administration and had the total approval of Foreign Minister Silveira. What delayed the agreement at that juncture was something that I am going to report because it is somewhat funny. Silveira called me on the phone in the morning and said; "Unfortunately, something inconvenient has come up. There is always someone who is cleverer than we are". He was referring to Minister Ueki, of Mines and Energy, who had proposed the increase of the number of turbines at Itaipu from 18 to 20 and had convinced general Geisel that this objective could be achieved (it was indeed feasible, since the turbines must be periodically stopped for repairs). But this brought forth again the emotional context we mentioned before, changing the atmosphere and provoking the impossibility to arrive at an agreement. This was the reason why the Itaipu agreement was not signed during Geisel's presidency.

As for the visit of the American high officials, Argentina had an intelligent position: it understood that there was no race to obtain the "nuclear toy", as we used to say at the time, between the two countries. Moreover, the thinking that was beginning to take hold was as follows: neither Argentina nor Brazil were parties to the NPT. At that time there was no opinion in favor of the signature of that treaty in any of the two countries, which represented a common point.

Now, what we could imagine between the two was an open non-proliferation treaty for Brazil and Argentina based on a mechanism that more or less could allow each one to know about developments in the other, thus establishing a confidence link. I want to say that we already conceived as a possible response to the American arguments, between 1975 and 1977, the establishment of a mechanism to permit the two countries to build trust regarding the possible

applications of nuclear energy or possible temptations in the nuclear development of the other party. This is because, I repeat again, the question of nuclear proliferation was not an abstract issue for all countries in the world: it referred to concrete situations. And the concrete reality existing in the region was solving the potential situation between Brazil and Argentina. On this point it seems to me that the diplomacies of the two countries sought a basic agreement even if there was, of course, some jealousy and suspicion between them that it was necessary to overcome.

Rego Barros:

I only wish to comment that at that time the atmosphere was very tense, maybe because of the constantly extreme positions taken on both sides. Both countries were also under military governments. I do not wish to say that the military were specifically guilty, but I was very much shocked when I learned that the situation between Brazil and Argentina was being compared with the one between India and Pakistan or the one between Israel and its neighbors. There is no comparison. (For this reason the non-proliferation demands by the IAEA to countries like Brazil and Argentina are so complicated and it is also difficult to understand that they were as strict as they are for Iran and other countries).

[In what regards American pressures], since the inception of the two countries there has always been a DNA resulting from the division effected by the United Kingdom, because the United Kingdom realized that Brazil would continue to expand toward the South and exerted pressure [to prevent it]. Then, in our DNA, the bad guys were the British and later the Anglo-Saxons. In a certain way, Carter filled this role. The instructions given to Cyrus Vance make that explicit. Then, fine, you can even understand it as reasonable when the objective is to prevent nuclear proliferation, but the countries that are the targets of this campaign see such efforts as radical: *Look*, *the Americans want to divide us, as the British did*.

Lampreia:

I wish to bring to specific points to the attention of the Chair. The first regards Warren Christopher. In the 1970's, he was Under-Secretary of State of the United States. Eighteen years later he returned as Secretary of State and I was then Minister and received him. By an irony of destiny, we signed a nuclear cooperation agreement. Then, as we sat there, ready to sign the document, I said to him: "Look how things are. After that traumatic trip you come back to Brazil to sign an agreement in a climate of peace, cooperation and harmony". And then he said something that really surprised me: "That was the biggest mistake in my life. I had just come into the Department of State and I was in a trap because Carter had made campaign promises that he was going to stop the Brazilian nuclear program and I thought we would have enough weight to do it. But on the contrary, my mission was a failure, I was mistreated, I was treated very aggressively. I never went into anything else without knowing exactly where I was treading. That was a complete mistake on my part".[20] I remember Silveira really went for Christopher's jugular.

PRESIDENT PERON OPENS ATUCHA PLAN, 21 MARCH 1974

I believe it was one of those things that happen in the beginning of governments, when people think they can do anything, that they can change the world, they will dispatch missions, they will make everything happen. I thought Christopher was going to answer: "Well, how funny, how ironic". But instead he had that emotional reaction. He said: "That was the worst thing that happened to me as Under-secretary of State".

Another point is about the Tripartite agreement between Brazil, Argentina and Paraguay that was finally signed by Foreign Minister Saraiva Guerreiro. I think Silveira did not wish to sign that Tripartite agreement with Argentina, he had doubts until the end. He blamed Shigeaki Ueki (Minister of Mines and Energy) who had a plan to put additional turbines at Itaipu. But he had a very tense relationship with Air Force General Pastor, the Argentine Foreign Minister. Pastor did whatever he could to have a harmonious position, a position of agreement, but Silveira was impatient with that. Throughout the period he developed a very negative attitude toward the question of Itaipu. For 10 or 15

years it had been a question with a high emotional charge for him and he did not want to close it personally. In the end he was extremely happy when the issue was resolved. That is, he was not against it. Guerreiro sent a very nice cable to him, saying *I just signed your agreement, the agreement you left ready to be signed.* Silveira was immensely happy. I was with him in Washington. But he did not want to sign in person.

Hurrell:

Can we go back to Christopher saying, "This was the biggest mistake in my life"? Looking back in history this mistake seems to have had an important role in helping Brazil and Argentina to come closer together. In this case it may have been a mistake as he saw it, but in fact it was an important part of the process of rapprochement.

Ornstein:

I think we should go back to the context of that moment. We are talking of the 1960's and the 1970's a period prior to the reciprocal visits between the nuclear sectors of the two countries. The Argentine and Brazilian positions had always been coincident, as Ambassador Saracho has aptly remarked, and this is clear in the negotiations of the treaty of Tlatelolco, when the two delegations worked as one and the "common enemies" were the same. The position of the two countries was that they did not accept limitations of any kind to their nuclear technological development at a time when peaceful explosions were being mentioned as a solution for civil works. Moreover, the construction of the new Panama Canal was being talked about. The new canal would not be in Panama, but in Nicaragua, making of that country the main ally of Brazil and Argentina in the negotiations that supported peaceful nuclear explosions. Neither of us wanted to renounce at that moment any possibility that could be brought about by nuclear technology, a perfectly logical position for two mature countries.

So, from the American point of view there were two countries that do not want to sign treaties imposing some kind of restriction to their nuclear development; two countries that ventured openly into nuclear technological development and looked for the same result: to obtain their own technological development and, as much as possible, autonomy in the nuclear field. The existence of deep mistrust was logical, even in the absence of a nuclear competition pointing to the development of nuclear weapons. It is important to remember that up to the end of the 1980's the IAEA had a division dedicated to the study of peaceful nuclear explosions, so this was not some Argentine-Brazilian madness. It was a position supported by the activity of the highest international organization in the nuclear realm.

Therefore, this may explain why there was no difficulty in the understanding between Argentina and Brazil, except for reasons that were contrary to it, such as the Itaipu problem. It was natural and logical for the two countries to pursue the same objective, which was not to compete against each other but rather to reach the goal and in addition to protect (and on this count Brazil may have been more demanding than Argentina) their industrial secrets and their national development. It was therefore logical that the United States would exert pressure and tried to confront the two countries. All this derived from a natural lack of confidence.

Rego Barros:

I apologize to intervene again on this issue, but there is a point I remarked in my reading that has not yet been mentioned and that was very traumatic for Brazil. It was a decision by the government of the United States in 1973 not to honor the supply of enriched uranium to the Westinghouse plant at Angra dos Reis. This created the chance for Paulo Nogueira Batista, an extremely clever man, but with a Napoleonic temperament, to seize the opportunity and enter the game via the agreement with Germany.

Castro Neves:

There were two moments there. The first was when we wanted to go forward to Angra 2 and Angra 3 with Westinghouse within the cooperation agreement with the United States, but the latter refused to transfer the construction technology, which was a Brazilian aspiration. The result was the cancelling of Angra 2 and the remaining contracts were restricted to Angra 1. Perhaps as a kind of retaliation, the United States started to put conditions on the supply of fuel for Angra 1. Afterwards, the United States, already during the Carter government, said that all agreements to supply fuels to Brazil, including Angra 1 and the Brazilian research reactors, should be subject to the requirements of the Nuclear Non-proliferation Act (1978).

This set of factors inspired Brazil to look for new partners. Then Paulo Nogueira Batista started negotiating with France and afterwards with Germany. The latter was more explicit in its offers. Later, at the time of the signature of the agreement with Germany, there was a retreat in several aspects considered sensitive in the nuclear fuel cycle. This situation, together with growing international restrictions resulting from the Nuclear Non-proliferation Act and the "Zangger List" (criteria for sensitive exports) led Brazil to what was called the parallel, autonomous or secret program.

Moderator:

We would like to focus on four questions now. First: what was the attitude of both foreign ministries about the policy of rapprochement? Second, did Argentina just support the Brazilian agreement with West Germany or did they also warn Brazil about inherent risks? Third, the personal relationship between Castro Madero and the Brazilian counterparts seems to have reduced mutual official mistrust, but we have to understand that better. And finally, how did Brazil react to Argentina's announcement in 1978 that they were going to build a plutonium reprocessing plant at Ezeiza?

Ornstein:

I would like to make a clarification about the third question, about whether the relationship of Castro Madero with the Brazilian nuclear officials had a positive influence on the nuclear relationship between the two countries. I would respond positively. Castro Madero's relationship with Professor Hervásio Carvalho (President of CNEN, 1969-1982) was excellent. I was present, and also participated in dinners here in Rio de Janeiro at the time of the negotiation of the treaty [of nuclear cooperation between Argentina and Brazil, 1980]. They knew each other from before. Both were governors at the IAEA and had participated together in many meetings. The same happened with Ambassador Paulo Nogueira Batista, who was the President of Nuclebrás. Even if they did not know each other from much earlier, there was soon complete understanding between them. I believe that at least on the technical level this facilitated the process that had been considerably delayed but as was said before was expected by both parties. I think that the interpersonal relationship had a very positive influence on the agreements signed in 1980.

LEFT TO RIGHT: AMBASSADOR CAMILIÓN, ARG. FOREIGN MINISTER CESAR GUZZETTI , BRAZILIAN PRESIDENT ERNESTO GEISEL AND BRAZILIAN FOREIGN MINISTER AZEREDO DA SILVEIRA, 9TH OF DECEMBER 1976

Camilión:

I understand that the relationship between Castro Madero and Paulo Nogueira Batista was excellent. Mark that I was a personal friend of Paulo Nogueira Batista and cannot but recognize that he was not easy to deal with. However, he related perfectly well with Castro Madero who, on the contrary, was someone relatively easy to deal with. They both related well and I had the chance to be present when they met for the first time at a meal in which, as I said earlier today, the dimensions and the dangerous or problematic aspects of the Brazilian nuclear program were evaluated including from the Argentine point of view. So I believe that in fact, as usually happens in diplomacy, the relationship of confidence between two interlocutors is very important for overcoming problems or to open perspectives.

Lampreia:

The 1978 announcement indeed caused great concern. It was perhaps the moment of the greatest anxiety in the bilateral relationship.

Castro Neves:

Indeed, there was some anxiety. [But] it was quickly dispelled, also with visits of Brazilian technicians to the plant of reprocessing of irradiated material at Ezeiza. There was also the perception in Brazil that the natural path for Argentina was going to propel it toward the reprocessing of irradiated material because the line that they had chosen, with natural uranium and heavy water, was highly capable of producing plutonium. So, in this sense, the Argentine option to reprocess did not scare Brazil. What we wanted to know was the assurances that such plutonium would not have an "anti-Brazilian" or non-peaceful destination, so to speak. But through the visits to Ezeiza, including due to the very dimensions of the plant, it became clear that nothing that could be harmful for the Brazil-Argentina relationship could come from there. So there was some relaxing on the part of the Brazilian technical establishment, although some military sectors from one or the other side always lived a little the fiction that the space of rivalry still permitted it to be said that both countries would have to develop a nuclear device as a counterpoint for the eventual threat posed by the other. But this never went beyond bravado on both sides.

Moderator:

Ambassador Castro Neves, how were these visits negotiated?

Castro Neves:

My first involvement with Argentina's nuclear activity happened when I worked as Secretary at the Brazilian embassy in Buenos Aires. In 1974 I received a delegation from the Superior War College that had in its program a visit to Atucha. The Brazilian technical sectors sent me a kind of questionnaire to be asked

there. I put the questions to engineer Jorge Cosentino, who was the director of Atucha, and started to ask about the time of the burning of uranium 238 and the intervals of replacement of the fuel, etc. After the fifth or sixth question Cosentino turned to me and said: *You don't need to worry, we're not building the bomb* (laughs). Actually, what I was trying to find out was whether the uranium isotope produced was the even one, which would be fissile. That would be useful to determine if it could serve as an eventual explosive or not.

AZEREDO DA SILVEIRA AND HENRY KISSINGER

In any case, these visits to the technical sectors, as Roberto Ornstein already pointed out, always had a much more fluid link because both sides understood they had similar problems and on the international level both countries were facing the same accusations. In a certain way, at the international community, Brazil and Argentina were sitting side by side on the defendants' bench. There was a clear perception that we had somehow to act jointly. A curiosity that has not been detected until today: in 1962 there was a framework agreement between Brazil and Argentina by exchange of diplomatic notes that was never submitted to the National Congress; it established by exchange of notes that at the IAEA Brazil and Argentina would take turns as members of the Board of Governors.[21] There was only one slot for the most developed member in the region and it was agreed that Brazil and Argentina had equal development and so they would take turns to fill that slot. This has worked impeccably to this day.

Ornstein:

I just wanted to clarify two things. Regarding the use of the reprocessing plant, I want to make it absolutely clear that there was never an idea to use the plutonium for weaponization. As I remarked before, particularly at the time of Castro Madero, Argentina wanted to master as many nuclear technologies as it could. There was probably no suspicion on the part of the Brazilian technical sector because they knew full well that in order to reprocess it is necessary to have irradiated fuel available. First of all, the irradiated fuel from Atucha under our agreement with Germany operated under IAEA safeguards. Secondly, we were forbidden to reprocess it without prior agreement from the German

government. Similarly, the fuel from the Embalse power plant could not be reprocessed without an express authorization from the Canadian government (the terms here were much stricter than the ones with Germany). And it also was subject to IAEA safeguards.

In short, what fuel could Argentina reprocess in its plant, a mere demonstration facility? The fact that reactors that use natural uranium moderated by heavy water are especially capable of producing plutonium contributed considerably to create a climate of mistrust with the United States and the international community about the Argentine intentions. It was also true, as Ambassador Castro Neves and engineer Jorge Cosentino said very clearly when he was asked about the degree in which the irradiated fuel was spent, that when it is used to produce energy it is very different from the fuel used to reprocess and obtain material useful for nuclear armament. So, the Brazilian scientific and technical sector understood this very clearly, while both the diplomatic and military sectors would have had difficulty to understand. For this reason I agree entirely with the evaluation; I do not think that the Brazilian scientific and technical sectors worried too much about the Argentine announcement.

Moderator:

Ambassador Lampreia said that the Argentine announcement created some concern and anxiety, but Ambassador Castro Neves said he felt reassured. Could we explore this a little more, please?

Castro Neves:

Anxiety was our mode of operation in principle (and prior to learning what was happening in effect as news were cropping up and media reports on both sides sometimes were very alarming). I recall that in 1973 there was a young and brilliant journalist called Mariano Grondona. He wrote an article in *La Nación*, the Argentine newspaper, stating that Brazil had acquired a much greater economic dimension than Argentina and that this dimension was go-

ing to grow even more because Brazil was larger than Argentina in geographic and population terms, etc. But he pointed out that Argentina should compensate for it qualitatively, including in the military field, and he advocated that Argentina should research the use of an atom bomb. I still remember that article. Well, there were those postures and also, on the Brazilian side, there were people who also shared this kind of mentality.

SECRETARY OF STATE CYRUS VANCE AND PRESIDENT JIMMY CARTER

Now, every time the scientific and technical sectors entered into contact there was great identity of purposes and the perception that the search for a nuclear *explosive could only be justified in one or the other country by considerations* of prestige. And this was doubtful in view of the growing tide of non-proliferation in the world at the time. So, there was never long-lasting anxiety in Brazil.[22] Both sides issued several requests for clarification to the other side all the way up until the resolution of the Itaipu dispute in 1979, when the gates for cooperation finally opened.

I recall that within the Brazilian foreign ministry there were divergent views between the economic and political departments. Our position in the economic area was that the existence of cooperation agreements in sensitive fields with Argentina, as that of nuclear cooperation, would be useful to dilute the relative relevance of the main contentious question, Itaipu. The position of the political departments was a little different: *Let us first resolve the main contentious problem and then deal with other areas in the relationship.* This was what somehow prevailed. President Geisel's attitude was: *Let us first resolve this Paraná River issue and then think about the rest.*

Camilión:

It is absolutely true that the political sector in the Brazilian foreign ministry and its head, Ambassador [João Hermes] Pereira de Araújo, were persuaded that until the question of Itaipu was resolved it would not be possible to go forward in other things. The idea of bypassing the question of Itaipu and dealing with those in which an effective bilateral cooperation could be developed

did not attract him. Moreover, I want to add something else – I never heard from any high official from Itamaraty, from Foreign Minister Silveira down, any concern about the Argentine reprocessing activities that began in 1978. The issue never arose in any formal or informal conversation.

Moderator:

In September 1976, Castro Madero proposed a joint declaration to dispel doubts about the nuclear ambitions of both countries. However, the Brazilian reaction was negative.[23]

Castro Neves:

I can give my testimony. After I came back to Brazil, in 1978, and three years later, when I moved to the General Secretariat of the National Security Council precisely to deal with the issue of nuclear energy, there was a deep confrontation on the Brazilian side: Nuclebrás on the one hand and CNEN on the other.

CNEN accused Nuclebrás by saying that the cooperation agreement with Germany would never permit the mastery of the full nuclear fuel cycle and above all that the safeguards agreement with the IAEA contained in INFCIRC 237 was so severe that included information in the safeguards and would not allow the transfer of any relevant technology. On the other hand, the agreement with Germany was to a certain extent the pet subject of the Minister of Mines and Energy Shigeaki Ueki and of Ambassador Paulo Nogueira Batista, who was under the jurisdiction of that Ministry because Nuclebrás belonged to it.[24]

Therefore there was a big confrontation that was even expressed in the strategic area. According to the law, the Secretariat of the National Security Council supervised CNEN and Paulo Nogueira Batista struck an alliance with the National Information Service (SNI), the intelligence agency, and also appointed several colonels to the administration boards of Nuclebrás and its companies. After all, it was a way of compensating the colonels financially. This created

rivalry, a certain friction between CNEN and SNI. The debate about concluding an agreement with Argentina or not, or denouncing the agreement with Germany and look for alternatives to it also reflected this power struggle in the Brazilian nuclear sector.

PRESIDENTS CARTER AND GEISEL IN BRASÍLIA, 1978

Moderator:

Can we come back to the comment by Ambassador Camilión that he never heard any high official of the Ministry of External Relations of Brazil mention the question of the Argentine reprocessing plant?

Lampreia:

First of all, we must recall that this was a period of tension and mutual mistrust about many issues that made up the bilateral relationship between Brazil and Argentina. If you look at the handwritten instructions by President Geisel in the document signed by the head of his military staff, you will see this clearly reflected. He said: "There are many pending questions and I do not want to deal with all of them at the same time; I want first to solve one and then face the next", and so on. So, in this context my dear friend Oscar Camilión would probably not be the kind of person with whom one would share that kind of anxiety. I mean, this is basically something for the internal level that you do not wish to share with your foreign counterparts. That was a time of short tempers. News of that kind cause much reciprocal disquiet. Fortunately we were able to dispel those apprehensions one by one in the nuclear field, but not so much in the case of Itaipu, which took years to overcome. This was a particularly difficult moment when it was much easier to distrust the other side than to feel confident.

Hurrell:

I would like to ask about the worsening of relations between Argentina and Chile. Was this seen in Brazil as an opportunity to progress further toward bet-

ter relations with Argentina?

Lampreia:

Not that I remember, as regards Itaipu, but I believe we knew that with the escalation of the conflict with Chile Argentina's rivalry with Brazil would decline. But this did not have any direct relationship with the negotiations on Itaipu, it was rather a general analysis.

Moderator:

I would ask Ambassador Camilión what was the feeling at the Argentine embassy in Brasília at that time and how it understood the Brazilian reaction to what was going on in your country.

Camilión:

Let us place ourselves in the year 1978. In 1978 the negotiations on Itaipu were reaching the peak. That is, the agreement achieved still during the Geisel administration. Thus the attention of the embassy was totally concentrated on this question. In addition, the shadow of the growing difficulties between Argentina and Chile hung over that problem. It must be taken into account that at that moment Argentina found itself in a very critical situation with regard to its relations with Chile and the more aggressive sectors in the government brought serious problems to the Ministry of Foreign Affairs within its regional relations system.

It is obvious that the Argentine Ministry of Foreign Affairs was determined to find a solution for the problem with Chile, but this was not shared by an important part of the armed forces. The intervention by the Pope created an opportune solution. I use the word "intervention" because it was used twice by the Holy Father. So those two shadows, both the conflict about the hydroelectric plants and the one with Chile projected themselves over the nuclear question which was being dealt with calmly and efficiently by the Argentine

technical sector. In truth, the reprocessing program was never treated as a question of the same relevance as that of the hydroelectric plants.

It is fitting to recall what Captain Ornstein reminded us of, that above all, we were before a technical question in which we could not, for material reasons, discard international conventions and for reasons of conscience we could not either take a step that would be too risky, bringing the reprocessing program to a dangerous development.

The reality was that we were coming to the crux of the Itaipu negotiating process at the height of the worsening of relations with Chile. The process of relations with Chile had a huge impact at the Argentine embassy in Brazil because we constantly had to inform the Brazilian government.[25] And that was not an attractive issue to deal with. So, those were our main concerns.

LEFT TO RIGHT: ADMIRAL CASTRO MADERO OF THE ARGENTINE NUCLEAR COMMISSION AND AMBASSADOR NOGUEIRA BATISTA OF NUCLEBRAS

Moderator:

What was the impact of the arrival of President Figueiredo to power in Brazil? We know that the climate of the relationship changed because there was a clear predisposition of the new president for improved bilateral dialogue. But we do not know what Figueiredo made of the nuclear file.

Camilión:

Of course, Figueiredo's arrival changed the atmosphere, there is no doubt at all. First, there is a question of personality. General Geisel was a distant person, somewhat haughty and we can say cold, while general Figueiredo was a warm man. There is no doubt that he had a good disposition toward Argentina because Argentina had received his father when the latter took asylum there in the 1930's on account of the political conditions in Brazil during the Vargas government.

Thus he was grateful to Argentina and had good childhood memories. This probably would not have been very influential were it not for the fact that

the relations had matured in that period. The Itaipu conflict abated gradually as the possibilities of finding a concrete solution increased and undoubtedly Foreign Minister Guerreiro was searching for a solution to the problem. I do not dare to say that ultimately Silveira did not wish for a solution, which is a possibility. But it is also true that when the new Foreign Minister took office the problem had already been solved.

When President Figueiredo went to Argentina, with the Itaipu question already resolved and with the enthusiasm that overcoming such an important crisis generated, the way was cleared for the signature of many conventions and also for modest progress on the nuclear question.

Rego Barros:

On this question I am going to provide some information that I learned much later from an Argentine newspaperman, the son of a great journalist from *Clarín*, Guillermo Piernes. Piernes told me that he wanted to have access to President Figueiredo and could not get it, there was no way he could obtain it. Then Piernes's father, who was already quite old, recalled that Figueiredo had lived in Argentina because his father was living there at a time when the San Lorenzo football team became the Argentine champion. Piernes senior then sent to his son a San Lorenzo jersey and Guillermo found someone who told the President that he, Guillermo, had a San Lorenzo jersey to bring. Guillermo told me that Figueiredo then included him in his delegation. That is the story.

Panel II

The secret programs and the beginnings of Argentine-Brazilian nuclear cooperation (1979-1983)

This panel covers the early days of Argentina's and Brazil's indigenous – and partially secret – programs for enriching uranium and reprocessing plutonium. It also discusses the arrival on the scene of President Figueiredo of Brazil, the set of bilateral nuclear talks of 1980, the Malvinas/Falklands War between Argentina and Great Britain in 1982, and the nuclear cooperation activities of Argentina and Brazil with Iraq, China and the Soviet Union.

NICHOLAS WHEELER
AND MATIAS SPEKTOR

Moderator:

Let us start with two questions. How do you interpret the decision by both countries, in 1979, to develop secret components in their respective programs? The second question regards the 1980 nuclear cooperation agreements: how did the two countries arrive at them?

Ornstein:

I shall start by speaking about the logic behind the 1980 agreements. At the end of 1979 and beginning of 1980 Castro Madero visited Brazil but there had been prior contact between the two Chanceries. I was present in this visit and there was a second one to follow-up the negotiation with another member of CNEA in April.

Castro Madero believed that pressure by the United States would be increasingly stronger and that the remaining countries, particularly from the West, would follow suit. Consequently, some defense had to be found and the only strategy possible was to create in the international community a clear aware-

ness that there was no military program in any of the two countries. The only way to achieve this was cooperation between Argentina and Brazil. If the two countries could convince one another of the need for joint action and build mutual trust, this would somehow make the international community aware and reduce the strong pressure from the Western countries. Moreover, we had to find other suppliers: I myself travelled to Moscow in that year, when the Soviet Union sold us enriched uranium and became our supplier for many years, of course under IAEA safeguards and a public commercial contract, etc. We also had to go to China in order to purchase a small supply of heavy water to renew the stock in our nuclear plants under IAEA safeguards.

So I would say that Castro Madero pressured the Argentine government hard in order to achieve quickly an agreement with Brazil. On the other hand, this was facilitated by the good relations that Castro Madero had established with Hervásio de Carvalho, the president of CNEN, and afterwards with the president of Nuclebrás, Paulo Nogueira Batista. I will not deny that we felt great resistance from some military sectors, particularly the Argentine and the Brazilian armies, at the moment of the signature of the agreement. The two Presidents somehow imposed it because above all both were military men and had overcome the internal opposition that had come up. But Castro Madero had a lot of work to do, it was not simple.

Camilión:

I would like to add that for the 1980 talks after the signature of the Itaipu agreement the climate was far more conducive to progress, at least on the level of the Ministry of Foreign Affairs. It is obvious that there was some resistance in military circles, certainly greater in the Navy, which always had kept a kind of monopoly in the conduct of the country's nuclear policy. But on the diplomatic front things were much riper. The spirit of the 1980 agreement was precisely to look for concrete exchanges: heavy metallurgy parts from the Brazilian side and the loan of zircaloy pipes on the part of Argentina. These were feasible and symbolic things. It was understood that once cooperation between

Brazil and Argentina in the industrial field started the gates would be open for the two countries to become as transparent as possible in communicating their respective nuclear programs to the neighbor so that the fear of an armaments race would be dispelled.

It must be taken into account that for some technicians the temptation of the weapon was not only a military question, but also that, as one of them told me, "One does not know everything until you make an explosion". I mean, the explosion means the completion of knowledge. I do not know if this is true, but if it is, it would be a purely scientific motivation, albeit very dangerous, especially when one speaks of peaceful nuclear explosions, something in which no sensible person really believed.

Ornstein:

I fully share and support Ambassador Camilión's view. However, I would like to clarify a couple of things. The 1980 agreement was in fact not only an agreement, it was a cooperation agreement at the government level, a convention to be implemented by CNEA with CNEN and a convention to be carried out by CNEA with Nuclebrás. But within the latter there was the Protocol of Industrial Complementation in which four questions were included and which in my view was the most genuine complementary piece.

The first was a loan of natural uranium to CNEN. Argentina had a relatively significant stock and the loan was made for one year and then renewed for the same period. CNEN paid for it in uranium interest, that is, it gave back a little more uranium than it had received. This worked perfectly. It was a demonstration of how the two countries could complement each other.

The second goal failed for technical reasons: it was the sale of a certain amount – it must have been of a few million dollars – of a technology for uranium purification (when the uranium comes out of the mine it is necessary to concentrate it and make what is known as "yellowcake". Argentina had developed

many years before a technology for this). The problem is that this technology is not applicable to all kinds of uranium deposits because uranium is mixed in nature with other kinds of minerals. The Argentine technology was good for the Argentine deposits. But the Brazilian deposit was located at Poços de Caldas, a very large deposit that was later explored for many years and that contained another mix of components. So, that technology of ours known as "heap leach" was not adequate. The Argentine geologists made a study and informed the Brazilians that "we will sell you the technology but it will not be useful for anything". The deal failed in a context of honesty on both parts.

The third agreement was very successful: Argentina demanded (with considerable difficulty) from Siemens that the lower part of the pressure vessel of Atucha II should be manufactured by Nuclep, the Brazilian company for large components that at the time was beginning to operate. This was hard to get because Siemens had already scheduled the manufacturing without involving Nuclep. To give you a clearer idea, the pressure vessel of Atucha, because of the kind of technology used, is the largest in the world. It weighs 1.200 tons. Just the cover weighs 200 or 300 tons. It was manufactured in four parts because there is no forge anywhere that is capable of making it in one single piece. The parts were taken to different places. One went to Spain, another to Germany and the most complicated one, the base of the vessel, was made in Brazil. Siemens had intended to manufacture it somewhere else. We needed to put a lot of pressure on Siemens to agree to this.

The fourth point did not have a good result, and could have been a success were it not for a misunderstanding. We forgot one actor in the nuclear field on the Brazilian side, a company named Furnas that operates the nuclear plants. Nuclebrás and CNEA decided joyfully that CNEA would supply the zircaloy pipes to make the fuel elements for Angra I. This meant that it was necessary previous certification of those pipes, in order to ensure they would work well. But the operator of the plant was Furnas and no one consulted it. Then, when Argentina sent the first consignment of pipes to be tested, Furnas said: "No.

No one consulted me. I do not want to test something that was produced in another country when I have a sure offer by a reliable supplier that is complying". So something that was perfectly logical failed because the reactors of enriched uranium require a much smaller number of zircaloy pipes than those of natural uranium and because Argentina had a pipe factory that produced more that was needed, since at that time it did not supply Atucha II and the next nuclear plants planned for the Argentine nuclear program. So this was a perfect way to complement both countries. Unfortunately, both sides made the mistake of forgetting that there was another actor that no one consulted and whose interest was commercial.

PROFESSOR ANDREW HURRELL

Moderator:

Our intention now is to move to November 18 1983, when Argentina announced that it had successfully enriched uranium at Pilcaniyeu. What is the explanation for the decision to develop a uranium enrichment plant when the previous line chosen by Argentina had been heavy water and natural uranium?

Ornstein:

The decision to develop the uranium technology of gaseous diffusion was a consequence of Carter's policy. When the supply of 90% enriched uranium for our research reactor was denied to us – at the time the reactor used that grade of enrichment – and enriched uranium at 20% was also denied for the reactor we were building in Peru, CNEA's reaction was what could be expected: let us develop our own capacity to enrich uranium.[26]

Such were the levels of secrecy – and this is a personal anecdote – that I, who was a companion of Castro Madero at CNEA and his personal friend since childhood, was not aware that we were developing the uranium enrichment plant at Pilcaniyeu, even as I worked at CNEA as head of International relations. I only knew about it when Castro considered that it was time for me to intervene.[27]

But what was there to fear? That pressure from the United States would be so strong as to make the project fail even before it could bear fruit. In fact, we learned that there were some satellite photographs obtained by the United States and that they had started to spread doubt. For this reason they sent the nuclear affairs attaché of the U.S. embassy to see whether he could visit the facility. We mislead him and organized a false visit in which everything was camouflaged. He left without having talked to anyone, which cost him his post. He also had a negative background because something similar had happened to him in India at the time of the first explosion. After all, we were aware that there would be unbearable pressure if the plans were made public. Then, when we considered that the first enrichment test at the pilot level had been accomplished (we are not talking of industrial production, but of mastering the technology) it was decided to consult Alfonsín, who had just been elected as President of Argentina about the opportunity of the announcement: whether he preferred to have the military government make the announcement in order to mitigate eventual problems for the civilian government that was going to be ushered in, or whether his own administration wanted to be responsible for the issue. Alfonsín chose to have the military junta make the announcement.

Moderator:

How was Brazil informed?

Ornstein:

At the time, there was special care with Brazil, which was informed even before the United States. A letter signed by President Bignone was sent to his Brazilian counterpart, Figueiredo, who responded in very conceptual terms.[28] Simultaneously, Dr. Dan Benison, an international CNEA high official very well known by the IAEA delivered a note to Hans Blix, who was then Director-General of that organization explaining the implications of this achievement and inviting him to visit the plant, which he did later on. The operation was handled with a lot of care. We also informed the United States, Russia, France and Germany,

our partners. But in Latin America Brazil was undoubtedly privileged.

Moderator:

Was there fear by the Brazilian side at any point?

Ornstein:

We did not perceive an adversary reaction or excessive concern from the Brazilian side, although we could have been wrong. If there was any reaction, it did not get to us on the Argentine side. Obviously the Brazilian intelligence must have acted. But it was not considered that a reaction from the Brazilian side could have stopped the development. Sincerely, the fear was that pressure from the United States would be such that we would have been unable to enrich uranium.

Saracho:

I recall that at that time I was serving at the Argentine embassy in Washington. I was immediately called back to Buenos Aires by the Alfonsín government. We followed the same line about informing about our nuclear activities and took particular care regarding pressure from the United States. There was no fear of an adverse reaction from Brazil. I mean, there was absolute continuity on this matter between December 1983 and January 1984, in the transition from military rule to civilian government.

Moderator:

Why did Alfonsín prefer to have the announcement made by the military government?

Saracho:

Basically, there was a dramatic change in Argentina from a military dictatorship to a civilian government. So any statement coming from a military gov-

ernment, in this case the announcement of uranium enrichment, allowed Alfonsín not to be involved and neither deny the success of the announcement made by the same military government that was at the end of its period. But there was no demerit of any kind with regard to the technological production and Alfonsín also received Admiral Castro Madero later on.

Moderator:

What was the impact of the 1983 announcement in Brazil?

Castro Neves:

There was surprise. There was an expectation on our part that sooner or later Argentina would develop reprocessing technology because it was more compatible with its line of reactors. However, no one knew of the enrichment intentions. By the way, if Roberto Ornstein did not know, much less someone on the Brazilian side would (laughs). There was surprise because of the enrichment of uranium. However, afterwards it was understood that it was an attempt at ensuring supply for the research reactors. There was a careful analysis made by a diplomat from the Brazilian embassy in Buenos Aires who made a detailed examination of the energy situation in the Pilcaniyeu; it was concluded that there were no conditions to enrich in a significant scale because there was not enough energy to power the compressors. The conclusion was that the enrichment plant through gaseous diffusion could lead to important results.

It was also understood more clearly that although Argentina could have been ahead of Brazil in many research areas, it had a shortcoming in terms of the industrial capability to transform such research in industrial activity. To provide an example that also explains the little concern in Brazil with the Pilcaniyeu announcement: the Brazilian centrifuges started to be built in 1979 and began to operate at the end of 1981 and beginning of 1982. One of them exploded when it reached the critical speed. From then on the tests with Brazilian centrifuges were made in chambers surrounded with sandbags, with the personnel

standing outside. When Pilcaniyeu was announced, there were eight Brazilian centrifuges in operation. Each one had a name. I recall that one was named after actress Sonia Braga, and another was named after actress Norma Bengell (laughs). They were located in an area managed jointly by IPEN and by the Navy, by Commander Othon Luiz Pinheiro da Silva, who was the great actor in this field of uranium enrichment by gas centrifuge. The Brazilian centrifuges were entirely produced in Brazil by Brazilian companies. What was not built at IPEN, for instance, came from Eletrometal, a São Paulo company whose owner was later afflicted with precocious arteriosclerosis and started to say that he was making the atom bomb.

RODRIGO MALLEA

There was, therefore, a certain feeling that the program could be followed more easily by using the industrial base already existing in São Paulo. For Argentina it was more difficult to transform its research into industrial activity. This made us look at their enrichment with ease. I thus confirm the perception of Ambassador Saracho and Captain Ornstein that there were no grounds for concern once the limitations of Pilcaniyeu were understood. We noted that Pilcaniyeu had chosen the gaseous diffusion method, the oldest technology among all, but that requires extremely powerful compressors to blow the uranium hexafluoride gas through the membranes that would separate the two uranium isotopes. It was rather a laboratory scale facility, was it not?

Ornstein:

I should like to make a technical clarification. The reason why Argentina opted for the gaseous diffusion technology was one of opportunity. CNEA had a team of physicists and chemists devoted to research and especially basic research, so we took advantage of this even if we later sought to apply these developments to the nuclear field. It so happened that at Bariloche there were a number of excellent physicists, capable of manufacturing the membranes and of understanding the whole process. This option was preferred simply because we had developed a capacity for it. It is true that the gaseous diffusion method presents a number of difficulties, is much more expensive and needs a large amount of

energy that could only be available at Pilcaniyeu at a much later stage.

We had difficulties building the compressors and developing the special oils that need to be applied to those compressors. But the only reason for choosing that path was that we had a group of scientists capable of working with these technologies and not with others. We are now working much more modestly in the development of enrichment technologies by laser and centrifugation and at the same time we have recovered the capacity at the laboratory level to enrich by gaseous diffusion. The idea is to study, later on, when it really becomes necessary, which of the three justifies a development at the industrial level in Argentina.

Moderator:

Let us cross over to the other side. The year 1979 marked the start of the autonomous Brazilian program. What was the reaction in Argentina?

Ornstein:

In Argentina the creation of a "parallel" nuclear program by Brazil was not a surprise because we saw very clearly that within the terms of the agreement with Germany somehow the indigenous national development was excluded and it seemed very difficult that Brazil could accept that kind of limitation. Brazil had to find a way out, a way to be able to continue developing its own technology and not a mere *turn-key* technology. In some sectors (I am speaking of the technical level, I cannot speak about the diplomatic level) there was indeed some doubt about whether there was some ulterior motive. But it was not really something worrisome and I am not aware of any move by the Argentine government or of any request for clarification to the Brazilian government. I have absolutely no knowledge about this, but it may be ignorance on my part.

Camilión:

The possibility that Brazil would develop an autonomous program was received

in Argentina without any concern because it seemed absolutely logical to us. We knew what Brazil was about; at that time it seemed very unlikely that Brazil would resign to itself to an imported German technology. I believe that for Argentina the idea that Brazil wanted to develop an autonomous technology was not only something accepted but also considered inevitable. Brazil already had a development that made it totally resistant to any idea of full foreign dependence in an area such as the nuclear field. This was seen in other sectors, such as space technology and the aeronautical industry, is it not? At that time Brazil already was showing that it possessed wings to fly, in the figurative sense of the word. So we can say that until 1979 there was no concern in Buenos Aires and this was not an issue discussed in diplomatic circles. I am not in a position to say anything about the technical levels, but at the diplomatic levels the question was not the subject of planning, there was no apprehension on the part of Buenos Aires. Neither was there, as far as I know, bilateral commentary.

Moderator:

At the close of the 1970's the American nuclear negotiator Richard Kennedy started to visit the two countries. The Brazilian reaction was to create a Brazil-United States Nuclear Policy Committee. In 1985 Brazil used this committee as a model and proposed the creation of a similar body with Argentina. What was the impact of Richard Kennedy's visits?

Castro Neves:

Richard Kennedy was already coming to Brazil since 1978 or 1979. In one of the visits he sought to give a positive focus to the cooperation between Brazil and the United States, trying to find some space in view of the great failure of the visit of Warren Christopher, already mentioned here. I had the opportunity to accompany Richard Kennedy on a visit to IPEN because he had heard about the centrifuge program. At the end of World War II Brazil had received two German centrifuges as war reparations (these centrifuges were confiscated by the American command and were sent back to Germany, but we got them back

disguised as something else). At some point they were hidden at the Institute of Technological Research and walled in there. Afterward no one remembered where they were. It was necessary to demolish a room in order to locate them. They were very old centrifuges and were repaired and put in working conditions. They never enriched anything. This was what was shown to Richard Kennedy, who looked very interested but commented with an assistant – and I was close enough to overhear --, "Well, if this is where they are they will need several decades to get anywhere".

One of the things that encouraged Brazil to decide for centrifuges was that Germany offered us the *jet-nozzle* method, which required powerful compressors that we tried to purchase but found no one to sell them to us. We tried France, the main supplier of high-power compressors, but the authorities in Paris refused by saying that it was sensitive material contained in the *trigger list* made by Claude Zangger. They wouldn't sell even if we put the purchase under safeguards. This was a reason in favor of the centrifuge option in Brazil. At that point the creation of a working group on nuclear energy between Brazil and the United States was mostly to do with buying time. The Americans insisted in trying to co-opt Brazil somehow. It was a period of several offers from the United States, such as fuel, nuclear material, electro-mechanical material for the nuclear area. There were a number of offers, all considered unsatisfactory by the Brazilian side. For Brazil, the group was a defensive instrument: a way of saying that all was being done strictly within the IAEA statute and that Brazil was not a member of the NPT and accordingly the safeguards document applicable to it was INFCIRC 66 of the IAEA and not INFCIRC 153.[29]

So all this was being explained continuously to the American side, stressing that there was no reason for any kind of alarm on their part in terms of proliferation and that this motive was also that of our Argentine neighbors with whom we had much more opening at the time than with the United States, without any doubt. The committee held a few meetings but it gradually lost steam, also because of changes in government, here and there.

Saracho:

The exact same thing happened in Argentina. Concretely, Ambassador Kennedy made the same proposals. I participated in this committee as director of nuclear affairs. We held two meetings a year, one in Buenos Aires and the other one in Washington. Effectively, we exchanged information on nuclear issues. The committee must have lasted two or three years, at the most.

PRESIDENT SARNEY (MIDDLE) AND GENERAL PIRES GONÇALVES, MAY 1985

Moderator:

Why did Argentina propose mutual inspections if there was no concern about Brazilian intentions?

Ornstein:

It so happens that the 1980 agreements and the conventions under implementation never produced anything concrete for the two parties. So I believe that the Alfonsín government felt the need to intensify cooperation and above all to implement a policy in which all would be transparent and diaphanous and people knew each other. I mean, that Argentine technicians could visit Brazilian facilities. There was no mention of "inspection" but rather of a prior stage to ascertain the real intentions of the other side because one thing is to speculate and another is to see reality. So I believe this was a very clever policy on the part of the Alfonsín government, of which Ambassador Saracho and Jorge F. Sabato were active participants. We started it so that people could meet each other, for the technical group of one country to see the reality in the other. This would create the conditions for cooperation, which was still on paper at that time in 1984-1985, to be more concrete. Now, I wish to make clear that as far as I know the initial proposal of the Alfonsín government had been a regional safeguards agreement, more than a bilateral one between the two countries.

Saracho:

Indeed, during the Alfonsín government from the Argentine side there was a

real wish of rapprochement with Brazil since the beginning of the preparation of the presidential campaign. There were already previous working groups in which I had the opportunity to participate and where the policy toward Brazil was especially mentioned, including the nuclear question. The first proposal from Alfonsín was of regional safeguards, but soon the discussion was centered on bilateral ones in the current model established at the Argentine-Brazilian Agency for Accounting and Control of Nuclear Materials (ABACC in the Portuguese/Spanish acronym).

But we should not dismiss the role of the pressures we received throughout this process from the United States, both in an open and in a covert way, through Ambassador Richard Kennedy or the allies of the U.S. in the context of the Cold War. The Soviet Union also played a role in this, talking to officials at the Ministry of Foreign Affairs to insist on safeguards and adherence to the NPT, an issue that was also the subject of French insistence. Therefore we should not leave pressures aide. Concretely, however, the presence of Alfonsín in the whole process was indeed very strong and there was a wish to integrate with Brazil in all fields.

Castro Neves:

I may refer to the Argentine proposal for mutual safeguards, which was very well presented by President Alfonsín. However, it came to Brazil at a moment of transition and great insecurity among the managers of the nuclear sector. As I already mentioned, our nuclear sector did not have a maximum undisputable official such as Vice-Admiral Carlos Castro Madero in Argentina.

Here we had Nuclebrás, CNEN, Furnas, the Ministry of Mines and Energy, the CSN and Itamaraty, whose role in the Brazilian nuclear area was more important I believe, than that of the San Martín in Argentina. This group that commanded the Brazilian nuclear sector had many internal disputes, each one always trying to occupy the space of the others. When the proposal by President Alfonsín was made, it was still not very clear, on the Brazilian side, who

would be dealing the cards at that moment when we were starting our democratic transition.

It is also useful to recall that 1985 was the first year of President Sarney in power. He created the Evaluation Commission of the Brazilian Nuclear Program (CAPN), chaired by the physicist José Israel Vargas, in which I participated. This brought great insecurity to the managers of the nuclear sector, causing the President of CNEN, Rex Nazaré, for instance, to take the view that a bilateral mechanism was not opportune at that moment. His idea was first to clarify how we were going to organize here and then move forward, so that this system of "mutual safeguards" would not be used internally to strengthen A to the detriment of B or to marginalize B in favor of A.

Moderator:

What was the role of President Figueiredo in that process?

Castro Neves:

Figueiredo was a central figure – much more for what he prevented from happening than for what he effectively did. We know of all the resistances of President Geisel to open further the cooperation with Argentina, also because of his temperament. President Figueiredo had an innate sympathy toward Argentina, where he had lived when he was fifteen with his father who was a political exile in Buenos Aires. So he had an interesting relationship on the personal level, to say the least.

He was already following the evolution of nuclear issues. During the Geisel administration General Golbery wrote in dispatches and documents: *F – Attention*. It meant: *Figueiredo, keep an eye on this.* So it was something that Figueiredo already had in mind, to authorize his main advisor on these matters, General Venturini, Secretary-General of the National Security Council, to move forward the cooperation with Argentina as soon as the conditions

ARGENTINA'S MILITARY
JUNTA TAKES OVER,
24 MARCH 1976

were favorable. In this way I believe that his role was very important because it helped to overcome resistances in military circles.

Camilión:

AMBASSADOR SARACHO

It seems important to recall the participation of Brazilian Foreign Minister Saraiva Guerreiro in bilateral relations. He had a really different approach from that of Foreign Minister Silveira, who had resentments toward Argentina the origin of which is not easy to understand and probably has its root in his experience as ambassador in Buenos Aires during five years. Maybe his misgivings came from there. But in truth the approach that Saraiva Guerreiro brought to the Ministry of Foreign Affairs greatly facilitated the action of our embassy and then the harmonization of the bilateral relations.

Figueiredo was cordial with the Argentines. He had a global vision: a good relationship with Argentina is worth more than five meters more or less in the level of Itaipu, which was in a way a symbol of something that had great justifications and also a number of preconceived notions around it. Figueiredo had looked at the bilateral relationship from a strategic point of view, that is, Brazil and Argentina needed each other in order to have an important specific weight in global relations and above all in continental relations. I again recommend, for those who have not done it yet, a re-reading of the famous 1957 book by Hélio Jaguaribe, because it contains the root of many ideas that were later developed in practical terms at a time when it was absolutely unthinkable that such things would come to pass.[30]

So I believe that Figueiredo had an important role, mainly in his intervention to reassure any sector of the armed forces that might be apprehensive about the relationship with Argentina. It is true that the majority of the Brazilian armed forces at that moment were inclined toward cooperation with Argentina, but there could still be resentments that Figueiredo somehow was able to dispel because it was a king of guarantee.

I also want to mention general Golbery do Couto e Silva, who was already mentioned here and is considered by many as the *scarecrow* in the bilateral relationship with Argentina. I have doubts about this because I talked often with Golbery about these questions and found him very reasonable, able to analyze problems in terms of the international position of Brazil. Already at that time there was an important sector of Brazilian thinking that considered that the expected international expansion of Brazil needed a peaceful rear guard and this led to believe that the relation with Argentina was seen in positive terms.

Rubens Ricupero (Special Advisor President-elect Tancredo Neves and to President Jose Sarney, 1985-1987):

What I am going to say is not directly related to the nuclear question, but I believe it would be a mistake to try to understand the evolution of the relations between Brazil and Argentina in the nuclear field by excluding what was going on in other fields because in truth all this was part of a great ensemble. I fully agree with what Ambassador Oscar Camilión has just said, about the clear change in the Brazil-Argentina relationship with the transition from the Geisel government and Foreign Minister Silveira to President Figueiredo and Foreign Minister Guerreiro. There is no other explanation for the Itaipu agreement to have been concluded in six months when it had been crawling for so long.

At the time I was number two at the Department of the Americas and Ambassador Camilión's interlocutor was my boss, Ambassador João Hermes Pereira de Araújo, an extremely cautious and very competent diplomat, but a man of the "old school". I recall that sometimes Ambassador Camilión came to Itamaraty to bring some new idea to the Brazilian government, presenting it to Foreign Minister Silveira in the context of the negotiation. After speaking to Silveira, Ambassador Camilión usually chatted with Ambassador João Hermes. And on one occasion, talking to me, Ambassador Camilión said, *What do I say to the Argentine government? Because here I have two interlocutors, one who only talks and does not listen and another who only listens and does not speak!* (laughs)

I tell this tale only to show the atmosphere that prevailed at the time and that made agreement impossible. My intention is also to bring a question that has not yet been mentioned, the Malvinas [Falklands] War in 1982. At the time I was already the head of the Department of the Americas and participated directly in all activities regarding the Brazilian participation in the conflict, and they were many. We grounded those British bombers that landed in Brazil to refuel and there were serious incidents between the Brazilian Navy and British ships bound to the zone of conflict. As is well known we assumed the representation of Argentine interests when relations with London were severed. Switzerland represented British interests and we represented Argentine interests for many years, until relations were re-established.[31]

MATIAS SPEKTOR

The reason why I bring this episode to the fore is that the war had the effect of bringing Brazil very much closer to Argentina, when it could have had the opposite effect. There were some events at the beginning of the conflict that caused some concern, especially with General Galtieri's rhetoric and his allusions to historic episodes. In Brazil, there was an influential sector among the public that was hostile to Argentina.

The newspaper *O Globo*, for instance, published an editorial on the first page by its director Roberto Marinho recalling events from the Second World War such as the sinking of Brazilian ships by torpedoes. It was said in that piece that the German submarines might have been fueled in Buenos Aires. There was strong pressure by the big press, by considerable sectors of the Navy that were very hostile. President Figueiredo and Minister Saraiva Guerreiro resisted very much by recalling that Brazil had been the first country to support the Argentine claim to the islands immediately after the British occupation in 1833.

This is an interesting episode because it was indeed an additional step, although not as important as the agreement of Itaipu and Corpus, in the preparation of the scenario that would later lead to other levels of cooperation. It contributed a lot to disarm old misgivings, particularly in military circles.

Camilión:

I must say to my dear friend Ambassador Rubens Ricupero that I recall perfectly that little anecdote, which was part of our many conversations at that time.

But I want to make another kind of reference to the relationship of the two countries during the Malvinas [Falklands] War. I am convinced that the most effective help that Argentina had in this period was the one it received from Brazil and to some extent, I should say, from Foreign Minister Guerreiro himself, who had extensive legal knowledge and was one of the most important figures in the field of International Law at the time.

At the United Nations Security Council, Brazil, on more than one occasion, made interventions that unfortunately did not have much echo. Brazil was probably the country that insisted most for the issue to be taken to the Security Council, especially when it was clear that the conflict was going to be disastrous for regional security. Brazil had obviously a great concern about what could happen in the South Atlantic in military terms, since colonial occupation by one of the major world powers could only generate concern.

It was not very difficult to foresee that when the war ended, as it had to end, countries like the UK, which did not border the South Atlantic, would become a dominant power there. This problem exists to this day.

But to be honest, the Brazilian support was only understood (not only the operations in which Brazil delayed British military deployments, but also Brazil's activity at the Security Council) by the few Argentine professionals who followed the issue closely and were devoid of the deep emotion that seized that country. So what Ambassador Ricupero said is important and represented another brick in the build-up of a new Argentine-Brazilian military relationship.

Saracho:

Cooperation with Brazil in the nuclear field was already being developed much

before the 1982 war. This war, a very unfortunate event for Argentina, had very significant support from Brazil, as Ambassador Ricupero has expressed, which we Argentines do not forget. The fact that we gave Brazil the authority to represent our interests in the UK – not without a certain hesitation – speaks to that fact.

JOHN TIRMAN

Moderator:

Between 1982 and 1984 the two countries purchased uranium from China. We found some anecdotal evidence that not only did Argentina and Brazil knew full well the other side was purchasing such uranium, but that they even went as far as buying it together. We would like to hear what you might have to say.

Ornstein:

I was in charge of the international relations of CNEA and I can say that the initial answer is no; the purchase of nuclear material by one country had nothing to do with that of the other. The Argentine purchase was a one-off operation, it must have been in 1982 or 1983. There was a load of uranium available in China at twenty per cent. I believe 100 kg, and it was very welcome to allow us to have some stock. The same happened with a small supply of heavy water from China, which was also available.

I should say that is was almost a question of a commercial business opportunity that was available, but there was not a big demarche. There were diplomatic contacts to establish the conditions under which the Chinese would request safeguards on all that material, accepted by Argentina without any problem. But there was no connection with a similar purchase made by Brazil.

Castro Neves:

In the Brazilian case there was a visit to China that happened at a time when we were still looking for sources of supply of uranium for our research reactors that

required uranium enriched to twenty per cent. In fact we bought from China not uranium, but the enrichment services. The delegation that went to China took eight and a half small containers of uranium hexafluoride produced at IPEN in a facility called PROCON, the Conversion Project. The Chinese supplied the uranium enriched at twenty per cent.

There is a version of this story – but I cannot confirm it - to the effect that one of the containers had uranium enriched to ninety-three per cent. One of our research reactors of American origin was still using a charge of ninety-three per cent. The objective of this purchase from China would be to complete that one cycle but then convert the reactor to twenty per cent. This, however, I really cannot confirm. My impression is that we did buy some uranium enriched at ninety percent, I am almost sure of it. IAEA safeguards did not apply but China demanded an exchange of notes with Brazil where we committed not to use this fuel anywhere except in the research reactor; not to use it without prior consent by China; and we committed to using the material for peaceful purposes exclusively. So in practice we had a bilateral safeguards agreement with China.

Moderator:

Ambassador, then the amounts were so small that any other use would not have been possible, right?

Castro Neves:

Yes, I believe so. I think the amounts were very small. They were relevant for the recharge of our research reactors, of which there were three (in Rio de Janeiro, São Paulo and Belo Horizonte).

Moderator:

The nuclear agreement between Brazil and Iraq is from that period. We wanted to discuss this to understand how the agreement was interpreted in Buenos

Aires.

Castro Neves:

AMBASSADOR SEBASTIÃO DO REGO BARROS

We have to travel back in time. The year 1979 was particularly critical for Brazil because foreign debt boomed due to the 1973 oil crisis. The Brazilian economy became totally out of control and we went through very painful mechanisms. This determined an extreme increase in our petroleum account. At that time Brazil produced about sixteen to twenty per cent of its petroleum consumption and thus we were extremely dependent on imported oil, particularly from the Middle East.

In this sense our dependence was very big and we came to a point when we had but a few weeks' stock of oil in the country. For this reason a mission was sent to Iraq. The context was a visit by Minister Camilo Pena, of Industry of Commerce. A side delegation accompanied him, charged with the negotiation of a nuclear agreement. It was headed by Paulo Nogueira Batista with the participation of Rex Nazaré Alves (CNEN), John Forman (Nuclebrás), Colonel Glicério Proença (National Security Council), Dario Gomes (Mines and Energy) and from Itamaraty Roberto Abdenur and myself.

In the negotiations with the Iraqis they said, *we want to make a nuclear agreement, training of personnel in the area of safeguards, in the area of nuclear safety, etc.. But what we really want is natural uranium, uranium dioxide,* UO_2. This is what was agreed. They would pay an extremely high price for that UO_2 to be debited in part from the petroleum account. Curiously, I have a strong impression that that money also was used to feed the parallel program at a time when budget restrictions were cutting not only the nuclear program resulting from the agreement with Germany but also all other kinds of investment. So an agreement was drafted for signing in the following year.

Brazil complied with all IAEA requirements. It was not a member of the NPT at that time and natural uranium, in the form of uranium dioxide, was not a

material subject to safeguards. Just Iraq, a member of the NPT, had in theory the obligation to inform the IAEA what it was doing, but that was not our problem. The agreement was to sell eighty tons of uranium dioxide, of which only sixteen were delivered. We did not deliver the rest. Neither did we give the money back. The Iran-Iraq war had started and the priorities were drastically changed. Later, with the first Gulf War and the dispatch of IAEA missions to Iraq, the stocks of Brazilian uranium were detected. The uranium was identified as ours by technicians from CNEN and the material was handed over to the IAEA. This was our cooperation with Iraq.

There was never anything very concrete, such as Iraqi engineers or technicians as interns in Brazilian facilities or vice-versa. There were, indeed, many visits. Rex went several times to Iraq. I went twice myself. Who must have been there more often was Air Force General Piva, who upon retiring started a company in the area of rockets and was an advisor to the Iraqi government.

Moderator:

Thank you. Did the Argentine side know of the Brazilian nuclear relationship with Iraq and about the purchase of Chinese uranium?

Ornstein:

Well, in reality none of the operations was known in Buenos Aires. The interpretation was that the sale, a sovereign action by Brazil, was of *yellowcake*, that is, concentrated uranium. We did not know until much later when it was already in a conversion stage. Regarding the purchase from China, we never knew. On the other hand, it would not have surprised us, since as Brazil had a research reactor that worked with highly enriched uranium, there could have been purchases of such material. Similarly it would not have been a surprise that they had purchased uranium at twenty per cent for the remaining reactors, that is, low enriched uranium. But neither of the two episodes had significant publicity in Argentina or gave rise to strange interpretations.

Saracho:

I would like to complement the information given by Captain Ornstein. In fact, Argentina did not know of the purchase of enriched uranium from China until much later. What received much attention from the press was the rapprochement of Brazil with Iraq, but beside the sale of *yellowcake* the Brazilian exports of railroad supplies and armaments to Iraq were commented.

Camilión:

Three reflections. First: In the 1970's, after the oil crisis, it was known in Argentina that Brazil had entered a critical phase because it sufficed a look at the Brazilian trade balance to notice a dramatic change, which, *en passant*, had quite an important repercussion on the urgency for the construction of Itaipu. Second, about the purchase of enriched uranium, I do not know whether Argentina had any kind of information. In fact it was quite normal, quite logical that if there was enriched uranium available, it should be obtained from China.

Finally, regarding Iraq in 1975, anything done with Iraq would become relatively obvious. At the time, Iraq was not an odd man out in international politics. In fact, for instance, soon after the first stage of the progress of the Brazilian relationship with Iraq, the vice-president of that country visited Argentina and was received in all normality by the Argentine government. At that moment the image was not what it became later. It is logical that the issue had been relatively unremarked. Iraq at the time was not an important international actor and was not seen as a threat.

Panel III

The atom in the transition to civilian power (1983-1985)

This panel first deals with the arrival of Raúl Alfonsín to power in Argentina. It then examines a formal Brazilian proposal for the joint renunciation to the so-called Peaceful Nuclear Explosions. The discussion turns to the relationship of the new Argentine government with three Brazilian presidents - Figueiredo, Tancredo Neves and José Sarney. It ends with the role of economic decay in each country and with the Brazilian domestic debate about a nuclear-propelled submarine.

Moderator:

Upon taking office Alfonsín created a commission to study the activities of CNEA. We wish to request our Argentine colleagues to explain that commission, its objectives and its conclusions.

Ornstein:

I was at CNEA, very close to Admiral Castro Madero and of his successor, Dr. Renato Radicella, one of the most brilliant late professionals that CNEA ever had. We knew that in certain sectors of the Radical Party, of the government that assumed power, there were many doubts about whether in fact Argentina had developed a nuclear weapons program. This commission was headed by Foreign Minister Caputo and if I am not mistaken it was composed of Jorge F. Sabato and a third person whom I do not recall exactly.[32] The commission investigated CNEA during about three months, talking to researchers and physicists and also reviewing several documents in terms that I would describe as cordial. At no time was there a difficult situation.

The conclusion was that there was nothing odd beside the strictly peaceful uses of nuclear energy. From that moment on Sabato became a defender of the Argentine nuclear policy and at some point he made a statement regarding the Argentine justification not to accede to Tlatelolco. Foreign Minister Caputo himself used the issue of nuclear cooperation in the relations with other countries. It suffices to say that during the period when he was Foreign Minister half a dozen nuclear cooperation agreements were signed with different countries. Therefore, if both of them had any preconceived ideas, these evidently were totally dispelled after the investigation at CNEA. This is all I am able to clarify.

GENERAL LEONIDAS PIRES GONÇALVES, HEAD OF THE BRAZILIAN ARMY

Saracho:

President Alfonsín had a very clear line of thinking: Brazil could not be a hypothesis of conflict for Argentina. Foreign Minister Caputo agreed fully with this and this idea started to take form when Argentina was still under a military dictatorship. I recall that there were clandestine meetings at a private club in a residential neighborhood called the "Club de los Hijos de Aylwin" in which Alfonsín and Caputo participated and I had the honor to be present in many of them.[33] In these meetings the question of the hypothesis of conflict was also dealt with and it was said very clearly that Brazil could not be a possibility of conflict for Argentina. There was total agreement between Alfonsín and Caputo on this.

Moderator:

A few days before the inauguration of Alfonsín, Foreign Minister Guerreiro suggested to Foreign Minister Caputo a proposal to joinly renounce peaceful nuclear explosions (PNEs).[34] This happened less than one month after the Argentine declaration about enrichment at Pilcaniyeu. A few months later, Guerreiro's advisor Roberto Abdenur presented the proposal once more to the Argentines to this effect. The Argentine reaction was positive, but Brazil ended up taking it back because there was no consensus at home, possibly among the military. Was the Argentine side aware that this proposal would be made?

What was your reaction?

Saracho:

Indeed, the Brazilian proposal was a very pleasant surprise for us and we had no problem to accept it. Afterwards Brazil took another course but Argentina was ready to accept that proposal. And as I said it was a very pleasant surprise. We did not expect that so soon.

Castro Neves:

We saw that a large part of the Brazilian intentions were very much geared to what was perceived in Brazil about events in Argentina. Undoubtedly the Argentine announcement that it had succeeded in developing the process of uranium enrichment by gaseous diffusion must have influenced the Brazilian posture to make that initial tentative offer, which was not the result of a consensus on the Brazilian side, but rather an attempt by Itamaraty to take the initiative, to create a *fait accompli*, a fact that would be difficult to reverse, under the mistaken impression that if there was a setback it would be because they had evil intentions. Now, if you read carefully the relevant memorandum you will see that at all times Ambassador Abdenur states that he is speaking on a personal basis, already guarding against eventual possibilities of backtracking.

Moderator:

Thank you. It is suggested in the document that the Brazilian scientific community could have had a relevant role behind the idea of promoting bilateral safeguards. Is there a memory of that?

Castro Neves:

Indeed, the idea of greater cooperation with Argentina, and even the possibility of certain aspects of the program to be carried out jointly, as well as the idea of mutual inspections, are contained in the spirit of the final report of CAPN to

President Sarney. By the way, one of the individuals who participated and was the drafter of this report was geologist José Mauro Esteves dos Santos, who was later president of CNEN and secretary of ABACC. He probably will be able to give a precise answer. But the idea of a joint program and therefore of joint inspections was already contained in the report of CAPN.

Moderator:

Thank you. Is it plausible to read this document as a signal by President Figueiredo to President Alfonsín, or should it be seen as an initiative by Itamaraty itself?

Castro Neves:

When you want to put forth something that does not enjoy consensus, at least from our side, you launch a "trial balloon", so no one is responsible. If it works, fine; if it does not, it did not exist.

Moderator:

Very good, thank you. How did the Argentine side interpret the Brazilian backtracking?

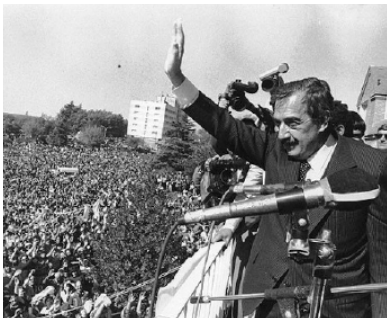
Saracho:

Argentina, as I said, was pleasantly surprised by the Brazilian proposal. We were ready to work seriously on it. But we also knew about the internal dissent in Brazil. In international language these facts are very easy to understand, both silences and insistence. You know that the other party is going through an internal conflict when it insists on a point or when it does not give an answer, or lets the issue fall through. But time went by and the answers were at best very vague, when they came at all, on the part of Brazil. We knew about the internal contradictions in Brazil, but it seemed very interesting that as the military process was coming to an end, a proposal like that would be forthcoming.

RAUL ALFONSIN'S INAUGURATION,
DECEMBER 1983

Moderator:

At that time the Argentine idea of working together with Brazil to develop a nuclear submarine was known.



PRESIDENT RAUL ALFONSIN GREETING THE CROWDS IN 1983

Ornstein:

Well, in fact we have to be more attentive to history. Argentina had arrived at a pre-feasibility study regarding the development of a reactor with reduced impact that could be installed in a submarine. The only commitment by CNEA with the Navy was to carry out a study of technical pre-feasibility, regardless of the economic aspect. At that time we knew of the Brazilian intentions in this regard, and we never questioned them, because it was something we agreed with: the defense of nuclear propulsion for peaceful use. Moreover, the idea of a Brazilian submarine in itself enjoyed absolute sympathy from the Argentine side because it could reaffirm what both countries had been arguing for in all international forums.

In any case, there is a concrete fact and this is that in reactor design Argentina had a big advantage over Brazil. All our reactors, including the first one, had been designed and built in the country. We came to have six research reactors – now we have five – and besides this we designed, built and exported two to Peru, one to Algeria, one to Egypt and one to Australia. I mean, we had *know how* in research-reactor development that did not really exist in many countries in the world, because there are only about half a dozen countries that sell reactors.

So it was believed that this could be one of the ways to find a project of common interest at that time and the technical sector said that an offer could be made to cooperate with Brazil in the development of a joint submarine, especially with regard to the design of the reactor. As I understood it, and I cannot say whether there was any opinion to the contrary, there was an indication by President Alfonsín to the Chief of Staff of the Navy, Admiral Arosa, who sent

the offer to the Brazilian Navy, which at the time was the owner of the program of developing a submarine and its reactor.

As far as I know it did not trigger much enthusiasm in the Brazilian Navy, and I am not speaking of the diplomatic or political side, but of the technical sector. In fact, we never worked effectively on the propulsion reactor. We developed a reactor at Bariloche and we are presently building another one of a different type in the same location of the Atucha I and II reactors, now called CAREM (Argentine Central of Modular Elements). This is the Argentine modular reactor, a small power reactor but that was designed at the time having in mind the possibility of development of a nuclear propulsion reactor for a submarine or an ice-breaker (or any other kind of surface vessel). But we never followed up on this project and finally we devoted all efforts to the reactor for civilian use, which is the one we are now building.

Saracho:

To complement the information given by Captain Ornstein, I think I have seen in this very well prepared *dossier* a press article in which there is an interview with Secretary of State Jorge F. Sabato precisely mentioning the idea of developing a nuclear submarine in cooperation with Brazil. This is something that President Alfonsín had ordered to the head of the Navy and the Ministry of Foreign Affairs supported him: that Argentina always had the intention to build the submarine jointly and we have what the Captain said.[35] The Brazilian Navy did not show enthusiasm until today.

Moderator:

Thank you. In February 1985, President Alfonsín and President-elect Tancredo Neves met for the first time. One month later, Alfonsín publicly proposed regional, and then bilateral safeguards. Foreign ministers Dante Caputo and Olavo Setúbal discussed the issue. How was that dynamic?

Ricupero:

AMBASSADOR CASTRO NEVES

Neither Tancredo nor Sarney were sensitive to the nuclear problem before they arrived at the presidency. I recall very sharply that we were introduced to the issue during the trip with Tancredo to Europe in January 1985.[36] During this trip, the first manifestation was a message received from Alfonsín, who participated in the Group of Six that had met in New Delhi and in Greece.[37]

I have a recollection that the message came from there (I was the diplomatic adviser to the President and had never been aware of that issue). I remember that we had to draft the answer from President-elect Tancredo Neves during our trip to Latin America, starting practically from zero. We did not know anything about this issue. The whole thing resurfaced during the stop we made in Mexico, when President [Miguel de] La Madrid, who was also a part of this Group, brought it up. And in Buenos Aires there was a discussion about this with President Alfonsín.

What I want to point out is that the initiative to bring up the issue came from Argentina, I believe for a simple reason: President Alfonsín had the benefit of being in power for over a year and had become aware of a question that was new for Tancredo. We must recall that Tancredo Neves had just been Governor of Minas Gerais. He did not deal with international issues. For him, everything was new. So, in the first talks there was an imbalance on our part: we were quite unprepared at that visit, it was almost a learning process, it was the first time we had heard of these questions. For this reason we should not exaggerate about our reaction. It was almost a wish to begin to graduate.

This can also be applied to President Sarney because at that time he did not expect to become president. He himself says that he was sleeping when he was called with the warning about Tancredo Neves's illness, an extraordinary shock for Sarney. The only preparation he had had was the participation in parliamentary delegations to the United Nations General Assembly. Only after he became effectively the President, after Tancredo's death, forty-five days later,

did he start in fact to learn about those problems.

I would also like to emphasize here something that in my opinion was fundamental: the start of presidential diplomacy in Brazil and I believe also in Argentina. Because I do not think that if we had kept the same kind of external policy organization that existed before, in the military government, the resources and mechanisms of the Chanceries would have been bold enough to go forward in those issues.

Let me explain what I mean. It is obvious that during the military governments there had also been some degree of interference by the Presidents, but it was much less and at least in Brazil the military accorded much prestige and value to the Ministry of Foreign Affairs. In the same way as they did not accept interference by civilians in military affairs, they tended to consider diplomacy, especially a professional and hierarchical diplomacy such as the Brazilian one, almost as equivalent to a military force. In twenty one years of military governments, very few Foreign Ministers came from outside the diplomatic service: only Juracy Magalhães and Magalhães Pinto. Neither left a very strong imprint. All other Brazilian Foreign Ministers were not only diplomats but also had become ministers almost as a hierarchical promotion, as happens with the military. With the exception of Azeredo da Silveira, all other Ministers had previously been Secretary-general of Itamaraty.

This professionalism had a disadvantage since the professionals lacked an internal political base to go forward in very controversial issues where there would be divisions within the government and especially if the military were not on the same side. Questions like human rights, the environment and the nuclear question, in all these cases the tradition of Itamaraty until today is conservative, defensive. It is hard to advance when one feels that there is dissension in the government. The diplomatic apparatus is not strong enough to oppose positions.

For this reason the posture of President Sarney on the nuclear question was

fundamental, although in a very slow and gradual way, because he had always been a very prudent man. He had the ability, little by little, to put himself on top of prevailing trends. Because the prevailing trend in truth was negative, the trend not to accept the NPT, to preserve the freedom of option even in the absence of a coherent project for the manufacture of a nuclear weapon. That hypothesis was always present. Sarney was the one who really started the opposite reaction. This would never have come from the Ministry of Foreign Affairs.

Saracho:

I wish to thank Ambassador Ricupero, who presented a very clear picture. What was called the "Group of Six" at that time was a very important antecedent to understand the Argentine proposals. Through an initiative by Indira Gandhi, the six countries expressed our will to exert quick pressure on the United Sates and the Soviet Union, which at that time were negotiating nuclear disarmament.

In Argentina it seemed to us very useful to intervene to the extent possible in that situation between the two superpowers that possessed huge nuclear arsenals and moreover, as you know, had divided the world into their respective areas of influence, bringing very serious consequences to Latin America as there were pressures and interventions by the United States during the Cold War.

So the Alfonsín government believed it was very important to support that initiative. Regular meetings were held in the six countries, briefly interrupted by the assassination of the Prime Ministers of Sweden and India. Their successors, however, followed up with the initiatives. I must also say that the Secretary-general of the group was Dutch, and permanently supported such initiatives.

Meetings were held by turns in the capitals of each of the countries. It is very interesting to recall that both the United States and the Soviet Union never replied to the claims of the six countries. Moreover, the American press agencies at no time mentioned the meetings or their conclusions. Perhaps just one line

in the *New York Times,* but nothing beyond it. American and Soviet policy was to ignore our actions completely; they did not consider us as valid interlocutors.

Moderator:

Thank you. Ambassador Ricupero, how did those dynamics that you point out expressed in the first meeting between Sarney and Alfonsín?

Ricupero:

Look, the first approach by the Argentine side had an informative character: to communicate what was being discussed at this New Delhi group. There was not much ground covered with regard to the bilateral question except in general terms: the need to start a process. I believe it became very clear that it was going to be a long process, that it was necessary to build confidence. I recall that this expression was used several times in the talks, "to build confidence" in a gradual way because there was no tradition of dialogue on that issue. So, at first there was nothing spectacular, just the wish to start examining the questions.

But the issue was going forward not only because of questions directly linked to the nuclear theme. The visit of Foreign Minister Olavo Setúbal was a very important stage. He came back very much impressed by his interlocutors – President Alfonsín, Dante Caputo, the Under-secretary for External Relations Jorge F. Sábato and the interlocutors from the economic and commercial area.

Being the wealthiest Brazilian banker, Setubal was impressed above all with the economic-commercial aspects. He felt a great impact with the complaints of imbalances in the commercial exchanges, with the lack of economic integration. I remember very well that he said to President Sarney that only he, the President, could solve that question. In the short run there was only one-way to try to reduce the imbalance: increase purchase of oil and wheat from Argen-

tina.

The sectors that dealt with this question in the Brazilian government did not have a favorable disposition (Petrobras for commercial reasons and the wheat sector because there was an agreement with the United States for the sale of subsidized wheat). Then the president decided to convene a meeting of the ministers connected with the question. I believe that it was the first time that something of this kind was done in the Sarney administration. He called a meeting and from then on a process was put into motion that would lead to the completion of agreements, in the drafting of which the diplomat Samuel Pinheiro Guimarães played a fundamental role. Samuel was a very important influence in the elaboration of these agreements, which were very clever because they sought integration in specific sectors and had balancing mechanisms.

AMBASSADOR RUBENS RICUPERO

Moderator:

Let us make a pause at that occasion, in May 1985, during Minister Setúbal's trip to Argentina. At that meeting Dante Caputo proposed, for the first time, the idea of bilateral safeguards.[38] We know that Setúbal responded by saying that it was a sensitive question that needed to be consulted internally in Brazil.

Ricupero:

My recollection is that Minister Setúbal took this issue to the President, but I did not follow its internal evolution. But I want to recall something that was important from the Brazilian side: the idea of proposing a Nuclear Weapons Free Zone in the South Atlantic. This came up during the Sarney government. It was Ambassador Celso Souza e Silva, who for many years was the most important figure in disarmament negotiations in Geneva, New York and elsewhere, who brought the initiative to the President of the Republic. He conceived an extremely interesting project.

I think it is a pity that until today this project has been forgotten because in my

view, although premature for the time, it would be worthwhile to bring it back. The proposal would include Brazil, Argentina, Chile, Uruguay, South Africa, Angola and Nigeria. There was no possibility to take it forward because South Africa still had *apartheid* and – it was known afterwards – nuclear weapons. Angola was split by a civil war. Brazil submitted the project to the United Nations and I believe Argentina was actively engaged. The resolution was almost unanimously adopted, with only the negative vote of the United States (because of the right of passage of its ships). The resolution was reintroduced over several years, but then it was forgotten.

Moderator:

Thank you. Ambassador Saracho, you signed the Argentine document that reports what happened in the meeting between Ministers Setúbal and Caputo. We would like to hear your recollections about this episode.[39]

Saracho:

The Argentine initiative to propose safeguards to Brazil, initially regional, and then bilateral, and different from those of the IAEA, was communicated to the other five members of the Group of Six. We met with a certain silence from Brazil because, as Ambassador Ricupero has mentioned, it had to be analyzed in detail since it was not an ordinary proposal, so to speak.

But when the meeting between Ministers Setúbal and Caputo was held, the latter was not a specialist in the matter, because the creation of DIGAN was recent. Technical support was provided by CNEA. So the memorandum produced by DIGAN for the meeting of the Brazilian and Argentina Foreign Ministers was made with full knowledge of the Argentine technical documents and followed the Argentine disarmament policy and the Group of Six. Fortunately, slowly but surely, there was a positive response from Brazil.

We really wanted to arrive at an autonomous system, different from the IAEA

safeguards. We were very well informed from the technical standpoint. We knew that we could not seriously expect a nuclear weapon from Brazil. But we also wanted to reassure the remaining bystanders, especially in a context in which we were supporting nuclear disarmament by the United States and the Soviet Union and had to give the example that our programs were entirely peaceful.

In this connection some opinions came up in both countries, in Argentina as well as in Brazil, showing some warlike frenzy. So the memorandum intended to avoid suspicion about our nuclear intentions. If there were doubts for some time after the creation of ABACC in June 1991, several years later everything that had been asked in that memorandum had been implemented. It was necessary to wait during some time for the positions to be decanted, as Ambassador Ricupero aptly said; in principle this was not an exclusive domain of Itamaraty. For this end, the start of presidential diplomacy in Brazil was very important.

Moderator:

In the period under examination there were important divisions in the Brazilian government (for example, very negative reactions against rapprochement with Argentina from General Leônidas, Minister of the Army under President Sarney).

Lampreia:

I am friends with General Leônidas to this day. He does not hide that if he could decide, Brazil would have gone forward to acquire nuclear weapons. But he certainly belonged to a minority and within the Army itself there was not a critical mass of opinion in that sense. So it became rather a declaratory position on his part. Leônidas was a key figure in the Sarney administration because as chief of the Army at the time it was his call to interpret the constitution to the effect that in the face of president-elect Tancredo Neves's death, the presidency would go to vice-president elect Sarney. At the time there were other options

on the table.

But I do not believe that he had ever disputed or questioned the rapprochement and the wide cooperation that was established with Argentina. President Sarney was immensely proud of that cooperation. He believed it was the central point of his political work. He would have kept it even if his Minister of the Army were openly against that position. But I believe that General Leônidas was not really a staunch adversary of cooperation and rapprochement with Argentina in that field.

Ricupero:

I would like to second what Lampreia has just said. At the time I worked very close to President Sarney and certainly would have known of any explicit manifestation by General Leônidas. As an additional element to reinforce this interpretation, I add, knowing of the reverence that Sarney had with regard to Leônidas that if the general had expressed opposition this would have created a very serious impasse.

I think that the episode of informing the Argentine government [before the public announcement of the Brazilian capacity to enrich uranium], for instance, would hardly have happened. If Leônidas had this position regarding the nuclear question it was something purely personal. I bring in another factor: at the time, I had a very close collaboration with General Ivan de Souza Mendes, the main figure in the military community. I never heard from him absolutely anything to that effect. Much to the contrary, he always seemed to be perfectly aligned with the position of rapprochement with Argentina.

Castro Neves:

It is important to note that there could be an additional motivation in the declarations of General Leônidas. Part of the nuclear programs was developed by the Air Force (the project of uranium enrichment by laser was carried out

at São José dos Campos). The Technical Aerospace Center (CTA) and the Air Force Technological Institute (ITA) had graduate and post-graduate courses in nuclear engineering, nuclear physics, etc. And this was something that was just beginning at the Military Engineering Institute, which belonged to the Army. But the Navy had a nuclear propulsion program, Project Cyclone (isotopic uranium enrichment), Project Remo (development of a small reactor for a submarine) and Project Chalana (development of the hull of the submarine). Well, the Army did not have anything and there was a claim to be awarded something in the nuclear sector.

CAPTAIN ROBERTO ORNSTEIN

So the Army created the so-called Atlantic Project, whose aim was to research and build a natural uranium reactor moderated by graphite. The objective was to produce graphite with nuclear purity. But there was no budget for this project. In the end we imported some graphite that ended up with the Army, but they never used it. In fact, a few years later the Army ended up auctioning the graphite in district of Nova Iguaçu. This is just to give a sense of the degree of dispute that existed among the three military branches.

Rego Barros:

With regard to this point, I witnessed an episode different from the one my three colleagues are mentioning. This was, I believe, during the first year of the Sarney government. General Leônidas invited the Minister of External Relations Olavo Setúbal to a meeting on cooperation with Argentina. The Foreign Minister was accompanied by the Secretary-General for External Relations, Paulo Tarso Flecha de Lima and myself (because I was keeping conversations with Jorge F. Sabato on the Argentine side). The meeting surprised all of us because what was presented to us was something absolutely crazy. The theme was the danger from Argentina. That was the issue. Reports were made by several military officers, including some who were later accused of torture, such as Colonel Brilhante Ustra. The Argentine danger was described in the following terms: Argentina was a huge military power. In case of a war between Brazil and Argentina, Brazilian ammunition would last for only five hours.

I cannot recall the details, but it was something very surprising. The Army's strategy was that if the Argentines invaded Brazil, the Army would retreat as far north as Curitiba and then would fight from there (laughs). Well, this was in the first year of the democratic government in Brazil. Olavo Setúbal, who was a banker, came out of the meeting absolutely surprised (laughs). I imagine that President Sarney did not have any idea.

Ornstein:

I have to say I am particularly struck by this perception because historically the Argentine perception about Brazil was totally the opposite. I would say that the evaluation at that moment, and I say this a little jokingly, ridiculously, was that if there would be a war between Brazil and Argentina the Brazilians would arrive walking, parading up to Buenos Aires.

This conception lasted for so long that the Argentine Mesopotamia, the three provinces on the border with Brazil, were doomed to total backwardness so that they would become no man's land in the case of a Brazilian invasion. It was believed that the Uruguay River would be crossed by the Brazilians without any problem. This meant not to build roads in the provinces of Entre Rios and Corrientes or bridges over the Paraná River, so that when the Brazilians came up to the Paraná they would find a big obstacle and could not continue advancing, as Ambassador Camilión already mentioned. In fact, it was a very realistic position, because the difference in capabilities in many fields was numerically very large.

I recall this without mentioning the strategic position of Brazil, who could cut all Argentine trade routes in case of a war. We would have to go around the Cape of Good Hope or through the Magellan Straits. That is, if the Brazilian ammunition could last for five hours, ours would last one hour. You see the differences of perception in each country about the other. In Argentina, some crazy elements even thought that the only defense against Brazil was precisely to develop nuclear armament, since it was the only possible equalizer, but it

did not go beyond that.

Moderator:

Captain, do the crazy elements have names?

Ornstein:

Honestly, I cannot remember. I know that at some point someone from the Army expressed himself in this sense, but I do not recall exactly who. But it never went beyond that. If you analyze it dispassionately, they were right. When you have a very powerful country next to you, the only form of deterrence, not to attack, but to deter, is with nuclear armament. The Cold War proved it, did it not? This balance of forces in the case of the West and the Soviet world prevented a third World War. Without it, the Russians would walk up to the Atlantic without any doubt. This defines clearly what the picture was at the time, the different perceptions and the different uses that the armed forces of Brazil and Argentina made to justify their existence.

Now I would like to recognize a very big divergence between the positions held by the Argentine and the Brazilian armed forces regarding the nuclear question. The Argentine armed forces were never seriously involved in the nuclear question. The nuclear problem was never an issue for the Navy. The fact that some of the presidents of CNEA had come from the Navy is due to mere coincidence. They were specialists in nuclear issues and had graduated as nuclear engineers.

I would say that not only the Argentine Navy did not intervene in nuclear questions but also it never gave them either attention or relevance. At the time of Admiral Massera, he was in bad terms with Castro Madero.[40] This was a significant difference with regard to Brazil, where the Navy was involved with nuclear questions just as the Air Force and the Army. The Argentine Air Force never had any kind of participation. And the Army saw this as something

distant, of which it participated with a few specialists. But there was no participation by the armed forces and neither did they use the issue of a possible atom bomb as an element of military planning. It is important to stress this difference. The participation of the armed forces in the Argentine nuclear development was zero.

Moderator:

Thank you. In order to take a look at what Ambassador Rego Barros said regarding General Leônidas's declaration I would like to call attention to the Argentine cable of September 1985. In it General Leônidas claims that Argentina is in a position to test its own atom bomb at any time and accordingly he requests funds to the Brazilian nuclear program.[41] This caused much excitement in the Brazilian press and led the Argentine embassy to request an appointment with the Brazilian Foreign Minister in order to clarify the General's declarations.[42] Was this was felt beyond the very small group around Minister Leônidas?

Castro Neves:

The cable was drafted by my late friend Juan Uranga and he mentions General Leônidas's declarations, but not in full. Because the declaration by Leônidas – and I remember because it was reported in the press – started with the words "Argentina is about to explode a bomb at any moment and therefore we must have it". Even in this outburst of his, this pretext was used to express what he believed the Argentines were doing.

Ricupero:

I believe there is really no contradiction between what we said and what later Ambassador Rego Barros added because the recollection I have is that Sarney was always very proud of the fact that when he led this policy of rapprochement with Argentina he had to face resistance.

What I meant in my first intervention was that the posture of Leônidas was

not necessarily contrary to that position. After all, that kind of posture, which he tried to make public, was a way of increasing the resources in order to allow Brazil to develop its nuclear program, but this did not mean that he opposed collaboration with Argentina, a rapprochement, an exchange of information. He was using that argument of a greater advancement by Argentina with regard to Brazil, which was general, as a traditional argument that the military always use in any part of the world in order to obtain resources. For this it is always necessary that public opinion believe in a threat, in a security problem.

But as I said before, knowing how close Sarney and Leônidas were, and knowing that Sarney felt that his government depended on the Army's support, I say this: had General Leônidas actively opposed rapprochement with Argentina, President Sarney would have not pushed for it, because this would have triggered a major crisis within the government. I do not think that there ever was active militancy by General Leônidas against rapprochement. There could have been generic resistance, but not active opposition.

Ricupero:

There is reality and then there are perceptions. It would be interesting to investigate how far such perceptions on the part of the military were sincere or whether they were a pretext to get more resources. I would like to suggest that in this examination we do not lose sight of the fact that both Argentina and Brazil were going through a very complicated economic and political situation and that the nuclear problem was a relatively less important concern.

Issues like inflation, which ended up having dramatic impact on both the Alfonsín and the Sarney governments, and also questions related to foreign debt. There were also problems resulting from the perception that political power under civilians was not fully consolidated. I saw this from inside the palace. So, we must take into account that such questions were quite minor within the scope of the general concerns of those countries at the time.

Hurrell:

May I follow up on this? The fragility of democratization in Argentina made rapprochement, pacification and peace in the region very important for Alfonsín precisely to prevent threats from the military that continued during the 1980's in Argentina. So there was, in terms of political fragility, an Argentine need for pacification that did not find an equivalent on the Brazilian side. Is this correct?

Ricupero:

Unfortunately, I cannot agree. First, because the perception of fragility was quite large on the Brazilian side. It must be clarified that unlike President Alfonsín, President Sarney had not been elected directly.

It was President Tancredo Neves who had been elected. Of course Sarney was in the ticket, but he came on board, as is well know, a little at the last moment. He was seen by the largest party in the government, the Party of the Brazilian Democratic Movement (PMDB) as an intruder, as an usurper. It is somewhat ironic that he is today one of the leaders of PMDB. He felt very much pressured by Ulysses Guimarães. He felt fragile because Ulysses was the one who should have been the President. And the preoccupations with Brazilian instability were quite large - differently from those in Argentina (because in the Brazilian case the military was somehow pacified by General Leônidas). But there was concern with the rise of the landless movement and their land occupations by force, the fear in the military of social turmoil was great.

There is a second element. Sarney had an immense desire of rapprochement with Latin America. The figure of President Sarney was decisive in this respect. We must not underestimate this presidential motivation which was stronger for him that the diplomatic apparatus. It is one of the few cases that I am aware of in the Brazilian diplomatic history in which he Head of State had a bigger wish to come closer to Latin America than that of the Ministry of Foreign Af-

fairs. The professionals were professionals, they dealt with that technically. In his case there was something else, can you see?

Castro Neves:

I do not agree either that the fragilities of the democracies led the countries to unite and to open up mutually (also because the rapprochement had started during the military government). Then, in reality, what happened was a continuation of this with greater legitimacy because they were two democratic governments already. President Geisel himself did not hit the brake in an absolute way. He said: "Let us first resolve the Itaipu dispute and then progress to the nuclear question".

Saracho:

I agree with what Ambassador Castro Neves just said. We were coming out of a military regime that had been very harsh and for us it was very important to prevent that from being repeated. I am not talking of the nuclear relationship, which as Ambassador Castro Neves has aptly remarked, followed something that had started before. I am referring to the democratic fragility of our country. For us it was very important to reverse that situation.

I recall that on December 17 1983, one week after Alfonsín's inauguration, there was a closed meeting at the Argentine Ministry of Foreign Affairs in which the President, Foreign Minister Caputo, Deputy Foreign Minister Sabato and other personalities participated, among which myself. At that time President Alfonsín signed a decree opening a legal suit against the military juntas. This was a priority for us and it was a policy to ensure a certain political stability in Argentina.

Now, about the nuclear question there was simply a continuation of everything that was being done before. There was not a kind of decision saying "Now we are going to pacify Brazil" in nuclear terms. The priority at that moment was

to democratize Argentina after a very serious dictatorship that we had suffered.

Ricupero:

Before transition to democracy the bilateral relationship was full of moments of great tension. The period when I was secretary at the embassy in Buenos Aires, from 1966 to May 1969, coincided with the government of General Onganía, when there were many incidents in the diplomatic day-to-day. In all big international or inter-American meetings there was always an Argentine resolution about prior consultation, which Brazil opposed, in the context of the dispute about Paraná River.

This paralyzed for a long time any possibility for a Latin American cooperation policy where Argentina and Brazil could be active actors. Trade relations became very complicated in this period, it would be a long list to be mentioned here, but it is also curious, many people were surprised with the apparent paradox that the existence of military governments in the two countries, instead of facilitating the relationship, which had somehow made it more difficult. This happened and it was a grave situation until October 1979, when the tripartite agreement about the question of Itaipu and Corpus was signed.

From that moment on the relations entered a much more positive period that was reflected in the last few years of the military governments and increased markedly with the civilian ones. There was indeed an identity that did not exist with the military.

For example, I recall quite distinctly that Presidents Sarney and Alfonsín understood that they were facing the same problems: inflation, external debt, internal instability, how to deal with the military, how to deal with human rights, the problem of the past. The problems were exactly the same and there was much identity because they were men with the same background.

I also recall that when Tancredo Neves met President Alfonsín both were liber-

als at bottom. They were liberals in the traditional, Latin American sense. They were men with many decades of experience in the parliament, in political parties; they were very similar in human experience, in political experience.

There was then an encounter that did not exist before, the military commands used to be formal, maybe at the level of the commissions there could have been greater collaboration, but the military chiefs were very formal. It was a relationship, I would not call it hostile, but neither was it cordial. With regard to the specific point of confidence building I mentioned, not so much those who dealt with this issue, but those that were going to have decisive influence: the National Security Council, public opinion, and the political parties.

It was necessary to prepare public opinion gradually in order to arrive some day at the agreement of reciprocal safeguards because we were starting from a point where there was in fact an attitude of mistrust coming from all that past confrontation in international organizations.

When I was called from Washington in 1977 to lead the negotiations of the Amazon Treaty, my sincere objective was to make cooperation in the Amazon region come true. But what was being said in Brazil, and that was never my own position, was that at bottom it was an episode of the confrontation with Argentina. I never agreed with this view but it was present, there was mistrust; there was a basic rivalry and we should not forget here that the role of personalities in these questions cannot in any way be underestimated.[43]

Moderator:

Would you say that Sarney empathized with Alfonsín? Did he know his counterpart was acting from a position of relative weakness at home?

Ricupero:

Undoubtedly. The caution of the two initial Brazilian reactions has two explanations: the most superficial was the novelty of the issue and the deeper one

was the resistances in military circles. Sarney was not totally sure. It was the beginning of the transition and he knew that he had to deal with the matter with extreme caution, in a very gradual process.

I have the impression that if General Leônidas had vigorously opposed this process Sarney could hardly break with him, because he depended on the General, right? And I believe it would be very bad for the issue. This leads me to believe that whatever the personal convictions of General Leônidas might have been, he never was an active militant aiming at preventing that process of nuclear cooperation with Argentina. But there was also an attempt to avoid a crisis.

In Argentina, however, President Alfonsín ended by being led to measures [like the legal proceedings against the members of the military junta] that later provoked reaction from the military. In Brazil that would be unthinkable. None of the politicians in power would consider it for fear that the same thing would happen (so much that until today, many years afterwards, it is still taboo).[44] So, the question of avoiding conflict with the military was ever present.

President Sarney always showed solidarity with Alfonsín. His friendship was sincere and he made a point of doing everything he could to help. He understood that to a certain extent the problems were not only of Argentina, they were also ours. In some areas, such as the problems of inflation and the external debt there was much similarity and he often thought of some common position, which was not possible because of the differences between the respective economic advisors.

Moderator:

Do you think that the trajectory of nuclear cooperation would have been different in the hypothetic scenario of a Tancredo government in Brazil?

Ricupero:

I think so. Not that Tancredo had any prejudice, but he belonged to another generation. He was the Minister of Justice when Getúlio Vargas killed himself in 1954. So he was a representative of another political era. It was a historic disconnect. Tancredo, however, was very cautious. Had he been the president, the relationship with Argentina would have been correct, but would not have gone much beyond this.

I don't believe that he would be much interested by foreign policy. Tancredo Neves represented that traditional approach of the old-timers in politics, who left diplomacy to the diplomats. He did not have a great desire to participate. And he was very much attentive to the internal problems, above all those of the future Constitutional Assembly. I don't believe he would have time for foreign policy.

Sarney had two advantages over him: he was younger and had a vast literary culture, he was more inspired by imagination, by poetry, by these kind of sensibilities. Moreover, Sarney could not exert a more effective political leadership as would have been the case with Tancredo, because he did not have the confidence of the majority party, PMDB. It is not a secret that Sarney never controlled the Constitutional Assembly. It was controlled by Ulysses Guimarães. So, in a way, and this is my own interpretation, some space was left for him to become interested in diplomatic problems.

Castro Neves:

I recall that in January 1985, or maybe in February, immediately after the formal election of Tancredo Neves by the electoral college, Sarney requested a briefing about Brazilian nuclear activities. The request was made to Minister Danilo Venturini, who was the Secretary-general of the CSN in the Figueiredo administration. Venturini asked the group in charge of nuclear matters to prepare information for the president-elect. There was a meeting between Dr. Rex Nazaré, President of CNEN, with Tancredo Neves at the Rancho Fundo Farm.

This meeting was also attended by Congressman Renato Archer and Congressman Fernando Lyra, who was also a close adviser to President Tancredo. On his return from Rancho Fundo, Rex made a quite detailed report of his meeting with Tancredo. The first thing Tancredo did was to take his arm saying "Let us talk in the garden". Then he asked a number of questions. Rex explained to the President the activities within the scope of international agreements. He said there was residual activity regarding agreements with the United States, greater activity within the scope of the agreements with Germany and also the autonomous, parallel program. Tancredo listened carefully and at the end he asked: "Professor Rex, what if the Argentines do something unacceptable? Are we prepared to react?"

At bottom this was a cultural problem on the part of Tancredo, a politician of the old guard, who was seventy-five at the time and whose basic perceptions about Argentina came from the first Perón government, when Argentina falsely announced that it was in a position technologically to develop an atomic bomb.

The presence in Argentina of the physicist Richter, who is said to have been "the builder of the atom bomb" is also mentioned in a book that, if I am not mistaken, is entitled *El Secreto Atómico de Huemul* (The Atomic Secret of Huemul).[45] So the whole cultural base of the president-elect was turned toward the past.

What Rex responded was: "Look, we follow very closely the nuclear developments in Argentina (although I must acknowledge that we share a common perception about our nuclear development and about our position in the international system), but this does not mean that we are watching them in order to learn what they are doing and to shape our attitude by what they eventually do, or do not do".

The Brazilian nuclear sector was convinced that Argentina was ahead and I recall that at one of the meetings that were held for the evaluation of the pro-

gram, one of the technicians presented that old equation that we studied in high school, the function with one dependent variable and one independent variable. He wrote *y=fx* on the blackboard and said: "Brazil is *y* and Argentina is *x*, because what we do will depend very much from the behavior of the Argentine variable.

I say this only to provide an interesting background because it was seen, from the Brazilian side, that the required position was to follow, to observe what happened in Argentina, what had happened, what effectively was going on and what could come to happen. It is interesting to note that this question of reciprocal safeguards had already come up in a meeting between Ambassador [Roberto] Abdenur, who was advisor to Minister Saraiva Guerreiro, and Jorge F. Sabato. There is also an initiative from Abdenur himself to propose to Sabato that they could talk about this issue. Obviously the question did not prosper because this happened in January 1985, when a successor had already been chosen. But Minister Guerreiro, to whom Abdenur reported, sent the matter to Minister Venturini who, in turn, informed his future successor, the Minister-Chief of the Military Staff, General Rubens Denys. Following this path, the matter was entrusted to me. In order to understand the essential reason why that question of the safeguards did not prosper there is by sheer chance an information paper prepared in April 1985 by my colleague Roberto Krause, who unfortunately has passed away.

The key to understand why the issue did not go forward is in this passage: "The mechanism of this kind would in any case be much beyond the joint declaration suggested by Itamaraty and about which it has not been possible, as seen, to obtain at least until now a consensus among the different Brazilian entities responsible for nuclear matters".[46] At that time, the proposal that had been made opened the door for the application of reciprocal safeguards not only on the activities already covered by the safeguards agreement with the IAEA, but above all the reciprocal safeguards, or reciprocal guarantees, would apply to the areas of the autonomous nuclear development. It would be an attempt to bring

in a much higher degree of mutual confidence.

Moderator:

Was the cautious posture in the Brazilian nuclear establishment represented by CNEN?

Castro Neves:

The Brazilian nuclear establishment itself was widely divided because the activities of the autonomous program were carried out by CNEN. A very small part had been given to some research organs linked to Nuclebrás, such as the Center for Development of Nuclear Technology (CDTN) in Belo Horizonte, IPEN, that belonged to the government of the State of São Paulo but was managed in partnership with CNEN, and the Nuclear Engineering Institute and Institute of Radioprotection and Dosimetry here in Rio de Janeiro.

There was activity by these actors and by the Navy, through COPESP, on the question of nuclear propulsion, and by the Air Force, on laser enrichment. There was deep divergence on the part of those actors. The main question was that no one wanted to be assessed by means of the application of safeguards. All agreed that safeguards should be applied to someone else's programs. Thus the Navy thought that it was very good to safeguard the program of the Air Force, who favored safeguarding the CNEN program, and so on and so forth.

Without doubt the Navy program was the best managed one. The Air Force program was a disaster: an allocation of funds made by CSN for the development of isotopic enrichment was used for the interior decoration of all the command offices in Brazilian Air Force bases.

The Brigadier-General in charge of the financial resources earned a reprimand because of this. He created a system with a pool of funds and diverted the money to solve other issues that had nothing to do with nuclear development. So there was this internal conflict in the Brazilian nuclear sector preventing the

government from presenting a consistent position. The only proposal on which there was consensus was that the process with Argentina should be gradual and aiming at building mutual confidence. So we would proceed in that direction, but it had to be very gradual because at the time there was not yet a clear idea about the adoption of those reciprocal safeguards, and their effects on the respective nuclear programs or on the position of the two countries in the international context, since both were under pressure.

Moderator:

Thank you. Was there a perception in Brazil that Argentina was trying to tie Brazil down institutionally?

Castro Necves:

It is possible that this could have been one of the motivations for the Argentines, just as our preference in Brazil for gradual confidence building also had to do with better knowledge of the Argentine nuclear activity. For our side the greatest concern was to know what they were to doing and to what extent they were doing it. In this sense, the Brazilian internal position was rather reactive.

Ornstein:

I would like to make two very brief comments. From the Argentine side, I do not refer so much to the diplomatic sector, but to the nuclear circles – the position of Itamaraty was assessed, or seen exactly the opposite way: as if it were the strong agency and the one that ultimately created obstacles to consensus among the technicians, who wanted to arrive at an agreement as soon as possible.

The huge difference in perceptions is remarkable. The other issue I would like to mention is the alleged Perón bomb, which never was the objective of the Huemul project. The title of the book on this issue, "The Secret of Huemul" written by Professor Mariscotti, a brilliant physicist that was for a long time a

member of CNEA, was chosen a little as an irony. The atomic secret of Huemul, besides being really a hoax, sought to produce energy by fusion at a time when the fission technology was still being developed. Although in the United States interpreted the Huemul Project as evidence that Argentina was going for the bomb, Perón's announcement was to state that Argentina had succeeded in mastering a process that allowed it to generate much cheaper and less polluting energy. Richter never worked on nuclear armament. Mariscotti, who researched U.S. archives many years later, showed that the Huemul case encouraged the United States to start working on fusion. The only place where I have seen a headline saying "Perón has the Atom Bomb" was in *The New York Times*, in very large fonts.

Lampreia:

Just a curious note: When General Perón tried to revive the ABC axis and found opposition from Brazil, he called Itamaraty "an engine for blocking" (laughs).[47]

Wheeler:

Ambassador Ricupero, you mentioned the process of confidence that developed between Sarney and Alfonsín and you also said that your visit to Argentina to announce the Brazilian mastery of the nuclear cycle was part of a process of confidence building. Could you speak of the evolution of the personal relationship between the two Presidents throughout the years?

Ricupero:

I would not separate the nuclear question from the ensemble of the relationship between Argentina and Brazil. I believe that the process of confidence building occurred also in other sectors, such as that of the international rivers. After that there was the Brazilian willingness to inform the Argentine side about all the measures to fill the Itaipu reservoir and on the technical level,

among the hydro-electrical engineers, there was much transparency.

I recall quite well that from a certain moment on the exchange of information began to go beyond the treaty. For instance, Argentine suggestions as to how fast we should fill up the Itaipu reservoir began to be accepted, something that hadn't been envisaged at all at the beginning of negotiations. In the beginning there was still some formality and then, little by little, we came to a situation in which the collaboration became easier.

I followed very closely the whole process until the end of 1987 and at the end there was great harmony, when we started it seemed unimaginable that we could arrive at that point. And this affected the ensemble of the relations, which had a difficult past. We must not forget that during most of their history Brazil and Argentina had a difficult relationship, a relationship of rivalry. In some moments even the hypothesis of war had been mentioned; there were critical moments, but never anything really concrete, as happened at the border between Argentina and Chile. But there were quite serious moments, and this was the prevailing climate.

I can say that when I started my diplomatic career almost all my predecessors were people who knew Argentina quite well but had many misgivings. There was all that memory from the past and stories about recollections were told. We are experiencing today a reality that has nothing, or very little to do with that. But those who had gone through the episodes of the past know that the building of confidence was a slow process that took place in many sectors.

In some areas it progressed more than in others (I think that until today there is much to be done on trade matters). So I would say that the nuclear process cannot be isolated. What was accomplished would never have been possible if a global evolution in the relationship had not come about.

Today not one Brazilian, not one Argentine, seriously thinks conflict is a plausible hypothesis. This has gone away and people today do not even understand

how we could have been there in the past. And I am persuaded that the contribution of the civilian Presidents was essential, because the prejudices were stronger among the professionals of the relationship, who were the guardians of the historic memory, those who knew all the precedents, the treaties and the problems. The civilian politicians, for their part, could not care less about that.

Panel IV

From the Foz do Iguaçu meeting to the mutual visits of sensitive facilities (1985-1988)

This panel discusses the interpersonal dynamic between Presidents Alfonsín and Sarney. It details their meeting in Foz do Iguaçu in 1985. It then deals with mutual intelligence activities, and it sheds light on the question of the boreholes at Serra do Cachimbo in Brazil. It finally tells the story of how a bilateral working became a permanent committee for bilateral nuclear negotiations.

SARNEY AND ALFONSÍN SHARE A MEAL AT PILCANIYEU, 1987

Moderator:

What was the interpersonal dynamic between Sarney and Alfonsín?

Ricupero:

There was never much intensity in the relationship. There was no regular exchange of letters between the two of them, only at special moments. Communication consisted mainly of personal encounters. Curiously, it intensified when they left office as presidents. Until the death of President Alfonsín, in 2009, there were regular meetings of Sarney, Alfonsín, and [former president of Uruguay, Julio María] Sanguinetti. During their presidencies, what was essential happened in personal contact. Sarney speaks only a little Spanish and Alfonsín did not understand his Portuguese well. So the dialogue was a little difficult but it was easier to correct language misunderstandings in face-to-face dialogues. There was never anything very systematic.

Wheeler:

Ambassador Ricupero, you made a very interesting description of the mecha-

nisms to establish confidence in several different areas. I wonder, taking into account your unique standpoint at that moment, if it is possible to identify some episode in which the personal confidence they established between themselves was decisive.

Ricupero:

Well, the first observation I wish to make is that this was a conscious process, it is not an *a posteriori* interpretation from a historian. We knew that we were engaged in a process and we also used the expression *confidence building*. So it was fully conscious of it and we always tried to find new ways to reinforce the process. As for episodes, I believe the decisive one was the nuclear area, because it was where symbolically, more than any other, the most delicate aspect of the relationship was expressed, that is the old rivalry in the security field.

Wheeler:

You mentioned awareness in the process of the establishment of confidence. So my question is to what extent was President Sarney conscious that he was transmitting confidence to Argentina in the nuclear field? And to what extent was it important for Brazil to reassure Argentina of its nuclear intentions?

Ricupero:

On this matter, President Sarney never needed any kind of prompting. He did not come to that conclusion because the Ministry of Foreign Relations suggested it to him. He understood this spontaneously. President Sarney is a politician with a very sharp sensitivity, he understands very subtly when people are not respectful or when a visitor is not polite.

There are people who have less sensitivity, but he is very sensitive. He is extremely sensitive to the gestures of others. He can also turn to a position of mistrust when he feels hostility on the other side, when he feels there is no good faith. I would say that I am in a position to give a testimony about this because

I was the note-taker in innumerable meetings of his with other people. I was always struck, since the first time, by his spontaneous mastery of the forms of diplomatic politeness, something that others have to learn.

He knew how to conduct himself with foreign leaders from the first time when he hosted the dignitaries who came to Brasília for the inauguration of Tancredo Neves on March 14 and 15 and after Tancredo went to the hospital. Since the first moment I was impressed by his mastery of the diplomatic technique. He is a spontaneous diplomat, a man of extreme politeness and civility.

So the idea of apprising the other person of something important comes spontaneously to him. He would be offended if the opposite had happened. For instance, he was very sensitive to the reciprocal gesture from Argentina inviting us to visit Pilcaniyeu. As I have already mentioned here he gave much importance to the initiative of inviting Alfonsín to visit Itaipu and to Alfonsín's acceptance. He used to say: "I did this against other people's opinion". I do not think there was really opposition, but other people from the Brazilian side would not have thought of it, or would have considered it too complicated. It was something that came from him personally, not an idea from advisers.

Moderator:

In the Argentine interpretation, curiously, the invitation to Alfonsín to go to Foz was provoked by Alfonsín himself. As he landed in Foz, Alfonsín allegedly invited himself, or made himself available to go to Itaipu.

Ricupero:

Yes. It is not entirely contradictory, is it? My recollection is that in fact he made a reference to this, but the reference would have fallen in the void if it had not been taken up. Perhaps it was not a spontaneous idea from Sarney, but Sarney immediately took up the idea and then started to say it had been his own. I believe that until now he is persuaded of that.

Moderator:

The presidential meeting at Foz do Iguaçu took place in 1985. Ambassador Saracho was present with Alfonsín in the presidential airplane. Ambassador, can you tell us something about the expectations of President Alfonsín at that moment, what kind of impression you and him had immediately before arriving at Foz?

Saracho:

The flight to Foz do Iguaçu was full of optimism and there we were positively received by President Sarney and his party. You have already heard about the meaning of the invitation by Sarney to Alfonsín to visit Itaipu. It was a gesture to express that the dispute over Itaipu was over for good. There were agreements not only in the nuclear area, but also a number of trade agreements that many see as the seeds of Mercosur. That trip created the momentum to move forward in the many aspects of the relationship.

Moderator:

Brazilian diplomacy interpreted that the safeguards proposal by Alfonsín could be an Argentine attempt at legitimizing its own nuclear program after the announcement of the uranium enrichment and in the context of the recent military defeat in the Malvinas/Falklands War. According to a specific paragraph on a recently declassified document, a safeguards agreement with Brazil would allow Argentina to come back to the nuclear market.[48] We would like to hear more about this.

Ornstein:

At that moment, and during the whole of the 40 or 50 years of its nuclear history, Argentina did not want to accept IAEA full scope safeguards. This had many consequences to the country that accepted them, such as the prohibition of peaceful nuclear explosions and other types of control. However, Argentina

was always willing to sign safeguards agreements with the IAEA based on the document already mentioned by Ambassador Castro Neves, that is, safeguards applied in a facility-by-facility basis, which implied a very firm control, even stricter than the one involved in a full scope safeguards agreement, but this involved a binding commitment confined to the nuclear facility in question.

For this reason most of the internal talks in Argentina were against the ratification of Tlatelolco: just like the NPT, this treaty contained the explicit obligation of full scope safeguards with the IAEA. I believe the mentioned paragraph is very clear and holds a precise observation on this subject; it contains a perfect perception of all that was going on. Argentina wanted to improve its image in the nuclear field, to make it more transparent before the international community, but was not willing in any way to pay the price of full scope safeguards.

So obviously the only possible way out was an agreement with Brazil that would make the activities transparent and reassure the rest of the international community that nothing of concern was happening. I know that the paragraph wasn´t that perfect as it was presented, but one has to keep in mind that it was the only way out if there was no wish to accept full scope safeguards.

Moderator:

One month before the presidential meeting at Foz, the Argentine Ministry of Foreign Affairs reported the flight of a Brazilian military airplane over the Pilcaniyeu facility.[49] The fact that there had been two Brazilian overflights at Pilcaniyeu one month before Foz suggests significant levels of mistrust. Is this right?

Saracho:

The Brazilian overflight of Pilcaniyeu caused concern to us. So we requested a clarifying note from the Brazilian embassy, and eventually the Brazilian government. Brazilian colleagues said here that because of internal divergences in Brazil, probably the Brazilian Air Force, under the pretext of carrying out a flight

to Chile, allowed the aircraft to fly over Pilcaniyeu without the knowledge of the Brazilian authorities themselves. The nuclear question was not centralized. We were aware of the internal dissent in the Brazilian armed forces. We knew then that perhaps Itamaraty and the President of the Republic did not control everything. But that was not a determining factor that had an influence on the presidential summit at Foz do Iguaçu.

Moderator:

Ambassador Saracho, do you recall whether President Alfonsín became aware of the overflight? Do you recall his reaction to the declarations by General Leônidas?

Saracho:

Alfonsín was informed of the overflight. Everything was reported to him through Jorge F. Sabato, including the declarations by General Leônidas. But, I repeat, there was awareness within the Argentine government that it was necessary to persevere on the path of nuclear cooperation; for this end we had a number of interlocutors in the Brazilian government. So we arrived at Foz do Iguaçu without the intention of discussing this with President Sarney, but we knew the facts.

Moderator:

Alfonsín saw the declaration by Leônidas to the newspapers, where the general said that Brazil should be in a position to develop a nuclear device because Argentina was in a position to acquire one. However, Alfonsín knew that Argentina did not have a nuclear weapon program. Next he knew of the flight of a military airplane over a sensitive nuclear facility and three weeks later he met Sarney. On the plane, on the way to the meeting, he made the decision to visit Itaipu.

Saracho:

Yes. Alfonsín was always willing to up the ante with Sarney and for this reason he proposed Itaipu. But for this it is important to take into account macro-politics, leaving aside the nuclear context, the overflight question, and the declarations from General Leônidas.

Castro Neves:

Regarding the question of the overflight, I would say that it was certainly an initiative by the Air Force, but not necessarily from the command of the Air Force, or from the minister. The process was not new. In fact, we had these episodes of overflights of non-authorized places, both by Brazilian military airplanes in Argentina, and Argentine military planes in Brazil.

I remember, for instance, that an airplane of the Argentine Air Force mail service that came to Brazil once a month, just as a Brazilian Air Force plane went once a month to Buenos Aires, submitted the usual flight plan to Brasília but deviated from the course and flew over the Anápolis Air Force base. There was another overfly by an airplane from the Argentine Air Force in Angra dos Reis. This non-authorized overfly caused some annoyance at the time because it was quite far from the coordinates of the flight plan, but there were no Brazilian official protest. In the Anápolis case, there was only an expression of displeasure from Brazilian aeronautics officers to the Argentine Air Force attaché, something like "look, we did not like that" and the Argentine attaché responded, "I take note and will report accordingly". That was about all.

Moderator:

So you would agree with the proposition that in cooperating bilaterally Alfonsín and Sarney were trying to rein in their respective military establishments?

Saracho:

The Minister of Defense was very close to Alfonsín and issued a very clear directive. In the aftermath of the Malvinas [Falklands] War, the Armed Forces

ALFONSÍN AND SARNEY
MEET IN PILCANIYEU

were completely unequipped. Later on, under Alfonsín, the military Junta was prosecuted over human rights violations. So our situation was very difficult indeed. We did not want a war with Brazil, by no means. This was not even open for discussion. And the instructions from Alfonsín to the Minister of Defense were very clear.

Castro Neves:

I think I agree and I stress the fact that was already pointed out by Ambassador Saracho: internally, the position of President Alfonsín was more comfortable than Sarney's because the Argentine armed forces were in a very precarious situation after the Malvinas [Falklands] disaster. The Brazilian armed forces were in a different situation, with the political opening and the end of the military regime deriving from a negotiation almost between equals: the political world and the military world.

General Leônidas, for instance, said to everyone close to him that he was the guarantor of everything; he always said that. Until at some point, some of his assistants started to say to him that he could be a candidate to the Presidency of the Republic. He never acknowledged it, but he liked the idea. So President Sarney had to be very shrewd in handling the armed forces, often exploiting their internal divergences and creating little by little a *fait accompli* against which no reaction was possible.

Moderator:

Thank you. In August 1986 Brazilian newspaper *Folha de São Paulo* published the news about the holes at Serra do Cachimbo, allegedly for nuclear testing.[50] I would like to know from the Argentine colleagues what the reaction in Buenos Aires was, in particular from the group closest to President Alfonsín.

Saracho:

I recall perfectly the announcement by *Folha de São Paulo* about Cachimbo and

on the basis of those news we made a request for information to the Brazilian embassy. This was standard procedure, as relations between the two countries were at a very good moment and we did not ask for more [reassurances] than those. I do not recall exactly what was the information given by Brazil, but it mentioned that Cachimbo would be used as a nuclear waste repository, such as the one Argentina had in Patagonia.[51]

Ornstein:

Yes, in fact Argentina is still studying where to build a definitive repository. When the news of the Pilcaniyeu overflight came out, there was no consequence in the technical area. It was within what was considered the classic game of the Armed Forces of the two countries, just like every nation in the world: find a pretext to take a nice photo, something quite common at the time.

About the Cachimbo holes, I believe they caused some bewilderment, right? It was accepted that it could have been a site for an eventual test of a nuclear explosive, either with peaceful or military purposes. There was no indication, however, that Brazil was about to conduct a nuclear test. It was as if someone had taken an early step, almost, perhaps, a local initiative, from one of the Armed Forces or a group, or something of that kind.

As for whether it could have been a definitive repository for nuclear waste, there were some doubts for the same reasons already mentioned: at first sight, it wasn´t appropriate for radioactive waste, maybe a provisional one… We would not have chosen a location like that for this end. But I want to say that it didn´t provoke, to be honest, any major concern. It was not thought that it could be the continuation of a program, rather something that had remained from some previous initiative. This is all I am able to comment.

Moderator:

Were the activities at Serra do Cachimbo initiated by the last Brazilian military government?

Castro Neves:

Cachimbo was prior to that. It existed since the 1950's. It was an optional airstrip in the Amazon region for airplanes with little autonomy that needed to land in an emergency. Cachimbo was a concession made to the Brazilian Air Force, which wanted to have a field for tests. But this also shows that the path envisaged was completely crazy, since no one starts to build a house from the roof. Do you start a nuclear program by the construction of testing grounds? The justification was that the facility would be used for the deposit of atomic waste, radioactive garbage. But it was also seen that it was not appropriate because there is a vast underground water table and all the equipment was lost because it was swallowed by the water. The pit was drilled by the Company of Mineral Resources Research (CPRM) and the technical conclusion was that the location was not suitable for a deposit of atomic waste, atomic garbage. So two other pits remained, one of which was closed with great fanfare by President [Fernando] Collor [on 18th September 1990]. The press also broadcast flashes of then Secretary for the Environment, Professor [José] Lutzenberger, urinating in the pit.[52] The third one also got shut.

I was personally at Cachimbo, both in 1984 and in 1985, already during the Sarney government, and there were not any signs of an infrastructure even for radioactive waste and much less for nuclear explosions, also because there were huge water tables in the area. Anything that was drilled there found water, and so it was neither possible nor suitable. The only suitable place for a repository of radioactive waste was in the State of Bahia at Raso da Catarina. Currently the only such deposit we have is at the town of Abadiânia, near Goiânia, and it was put there after that radioactive incident.[53]

Moderator:

Ambassador Castro Neves, is there any relation between the Serra do Cachimbo holes and Project Solimões under the Brazilian Air Force, which sought to develop indigenous technology for uranium enrichment by laser?

Castro Neves:

The project established that the development of isotopic uranium enrichment, the reprocessing capability, and extraction of uranium from the irradiated material, as well as the development of a number of issues linked to the construction of research reactors or miniaturized reactors, as was the case of a reactor for a nuclear submarine, would give Brazil to capability to go forward toward building a nuclear explosive, in case it wanted to do so, or there would be a decision to that effect. At no time was a nuclear explosion advocated or foreseen under any pretext.

There were different perceptions within the Brazilian nuclear sector. Some crazier people thought we should promote a peaceful nuclear explosion with international prestige objectives. I was interested by an article reproduced here, from journalist Leila Reis, mentioning a former military minister, who is not identified, for whom Brazil should promote a peaceful nuclear explosion in order to increase its prestige, just as India had done.[54]

I know that one of those who spoke about this was the late Air Force General Délio Jardim de Mattos, Minister of Aeronautics. He believed that on the day we performed a nuclear explosion the whole world would cheer, full of admiration for Brazil. But this kind of question was never endorsed, either by the military president, Figueiredo, or institutionally by the Brazilian nuclear sector.

Moderator:

Thank you. There is evidence that General Délio took a proposal to President Figueiredo that was like this: Brazil should carry out a nuclear explosion at

the end of 21 years of military regime. This would be done during the last few months of the Figueiredo government as a way to demonstrate to the nation that the dictatorship had attained autonomous technological development and this would justify to some extent the two decades of authoritarianism.

Castro Neves:

I can confirm that there was a document from Air Force General Délio to President Figueiredo. It is a piece that would be envied by any writer of fantastic realism. I mean, the document itself was incongruous. It proposed that Brazil carry out a peaceful nuclear explosion on 14 March 1985, on the eve of the inauguration of the civilian President, because this would demonstrate the great prestige of Brazil and the great success of the military regime.

But at the same time he recognized that Brazil did not possess minimal technical conditions to do it because it had not succeeded in enriching uranium to an explosive grade, had not succeeded in reprocessing plutonium from irradiated material (because all of the irradiated material was under safeguards and only a few milligrams were reprocessed, almost always for medical applications such as pacemakers and things like that).

So based on this he proposed that the uranium that had been purchased from China, a small container at ninety three per cent for the fuel element of the research reactors that needed a higher flow to produce certain radioisotopes, should be used to make an explosive device. According to the technicians, this was also practically unfeasible.

In the end the document proposed an objective, but explained that there was no possibility to achieve it. It was a somewhat rhetorical piece. I saw that document and I was charged with drafting an information paper for the President. And I said that it was madness (using respectful language, of course, otherwise the bomb would explode on me!) (laughs). But according to what I heard President Figueiredo exclaimed "Oh, this is Délio's madness!" and said that the

matter should be forgotten.

Moderator:

Ambassador Castro Neves, do you know whether Air Force General Délio was aware of the amounts of Chinese uranium that had effectively arrived in Brazil?

Castro Neves:

I do not know. Nuclear issues at the Air Force were dealt with by Air Force General Hugo Piva and later by Air Force General Reginaldo dos Santos. Well, they knew about the issue but had not participated in the negotiations with the Chinese that led to the purchase of the enriched uranium. Itamaraty did participate. Counselor Abelardo Arantes was a member of the delegation that went to China, which included Rex Nazaré as Head of the delegation and also, an officer from the CSN, Carlos Alberto Quijano, and an official from SNI, Ary Carracho. But the Air Force did not participate in it.

Moderator:

Can you estimate how many kilograms were there?

Castro Neves:

Maybe Captain Ornstein can help me guess here. It was a small container approximately this size (makes a gesture with the hand) and it contained uranium hexafluoride. We took natural hexafluoride to China and brought back enriched hexafluoride. It was not a substantial amount and I doubt (I am not an expert but I doubt) that it could be suitable for an explosion.

Moderator:

In August 2005 former President José Sarney gave an interview about this episode and said he had given an order to close Cachimbo, but the military did not obey him.[55] We would like to hear you on this.

Ornstein:

Well, we from the Argentine technical sector were very surprised with the declarations from former President Sarney, whom we thought had had an extremely important role in the rapprochement. We were surprised in all senses, and to be honest, we were not happy. We did not see any reason for this declaration to be made so many years afterwards because it somehow brought back doubts that we had already dismissed and that we had completely put aside.

So what was the real objective of those declarations? We are still puzzled about this statement made so many years afterwards about a question that was totally closed, sealed and happily solved between the two countries. So, in fact, the only thing it produced in the nuclear area, in the Argentine nuclear sector, was disquiet. This is the word that better reflects what we felt.

Castro Neves:

I remember this interview. I was abroad; it caused me some… I won't say surprise, but certainly the reality described by Sarney was somehow intended, I believe, to stress his role as having assumed the control of nuclear activities and changed their course. In fact, he already knew of the Cachimbo pit upon taking office as President of the Republic. There was a complete report, the same report from Venturini to Figueiredo, with some adaptation and updates, which was presented by Rubens Denys to President Sarney as soon as he became effectively the President of the Republic after the passing of Tancredo Neves. By the way, the Cachimbo pit was known well before that. In the dossier the organizers put together here there is a text of April 1985 where the existence of the Cachimbo pit is already mentioned. But I believe that President Sarney's interview was a kind of sugarcoating regarding his own role in the dismantling of the military control over the nuclear program.

Moderator:

Thank you. Following the Foz do Iguaçu meeting of November 1985 a working group was put in place in order to institutionalize the nuclear dialogue. What was the dynamic of its meetings?

Saracho:

This group met approximately every four months but to a certain extent it was a continuation of our technical group, assisted by technicians from CNEA. So there was continuity with respect to our previous work. In this way, what would later become ABACC started to take shape.

Progress was slow, but as I said we knew the difficulties we found along the way, that the interlocutors in Brazil did not speak with the same voice, that they were very scattered. We dealt basically with Itamaraty. This group worked quite well. I participated until 1988 and then I was transferred abroad. It was a very slow process, basically not because Argentina did not want to speed it up – we knew that in Brazil there were several interlocutors – but we always counted on the good will of our peers at Itamaraty.

Ornstein:

I had the pleasure to participate in this Joint Working Group and later in the Permanent Committee, until 1994. I did not remember, but having looked at the documentation I see that yes, in reality it was a Brazilian proposal to include in the *Foz do Iguaçu* a Joint Declaration creating the Joint Working Group to replace the reciprocal safeguards proposal that the Alfonsín government had initially put forward. We worked in great harmony. The meetings, of course, were held by turns in Buenos Aires and usually in Rio de Janeiro.

I participated practically in all of them and we really made progress, but we felt that we had to increase the pace, as Ambassador Saracho kept saying. There were reciprocal visits during the whole process. I should say that in the long run

this had a tremendous importance and ensured much continuity in the nuclear field when the Alfonsín administration was replaced by Menem's, something that did not happen in the case of other fields such as the economic policy. But in the nuclear area there was an uninterrupted line which fundamentally ensured the permanence of Argentine professional diplomats and CNEA technicians who were beyond party divisions.

I think that the only difference was, from the Argentine side, the attempt to speed things up beyond what was reasonable. We, from CNEA, were fully aware, as Ambassador Saracho pointed out, of the difficulty involved in pushing forward too quickly. For this reason we were very reticent with regard to intention to speed up the process and risk biting more than we could chew, as the old saying goes.

Moderator:

Thank you, Captain. Let us go back to the process of transformation of the Working Group into a Permanent Committee.[56] How was it carried out?

Ornstein:

Those of us who participated in both groups practically did not notice the change. There was greater institutionalization, the objectives became clearer. There were no suspicions or an initial coldness. I would say exactly the opposite, there was much enthusiasm. We did not always close each meeting with some concrete achievement, but we never encountered difficulties or unpleasant situation. Afterwards the dynamic decreased somewhat: we started to hold one annual meeting in each country by turns and later to a bi-annual meeting. The process had well defined ends and objectives. The main goal was not only to negotiate agreements but also to establish common positions in all international forums. This was completely and fully achieved.

Castro Neves:

I participated in the process that led to the creation of the Working Groups that were later transformed into a Permanent Committee as the Brazil-Argentina cooperation became institutionalized by means of several committees. The institutionalization, in fact, meant giving a new brand to these organs that were created and that sought to work sector by sector. This was inspired by an idea of Samuel Pinheiro Guimarães: to ensure that the integration between Brazil and Argentina did not become a confrontation with Brazilian interests on one side and those of Argentina on the other the integration should be done by sector – agriculture, the hinterland, industry, and so on.

It was an ingenious way to provide concrete instruments for cooperation. This was somewhat impaired by exogenous reasons, such as the economic crises that little by little started to touch Argentina and Brazil and led to a slowdown in the rhythm of nuclear activities. This resulted in a certain abatement of the enthusiasm.

Moderator:

Ambassador Ricupero, you were President Sarney's envoy to Buenos Aires to give first-hand information to Alfonsín about the Brazilian uranium enrichment at Aramar, Iperó. How was that operation conducted? What were Sarney's instructions? How were you received in Buenos Aires?[57]

Ricupero:

President Sarney always attached great value to his personal role in inviting President Alfonsín to visit Itaipu. He always told me that this was his own personal initiative, something that had not come from other instances, and that had a great symbolic value for him. As Itaipu had been the bone of contention, the physical visit of President Alfonsín was a symbol that the past had been overcome. Moreover, the next step was the gesture of courtesy made with the

invitation for us to visit the Pilcaniyeu plant in Patagonia at a later date.

Regarding my mission in Buenos Aires, the intention of the President was also very personal, since he chose me for that reason (and not someone from the Ministry of Foreign Affairs). Within the hierarchy of the presidential office I was the highest ranking officer dealing with international issues, the title of my job was "Special Assistant", a function previously performed by Dr. Celio Borja. When he was appointed to the Supreme Court I left the Civilian Household and became Special Assistant. This position in the hierarchy was immediately below that of the Chief of the Civilian Household. It was the most important, the one that was closest to the President, and I was personally attached to him in that job.

This is why he wanted me to go to Buenos Aires instead of sending a diplomat from the Foreign Ministry; he was giving it a personal angle to which, by the way, President Alfonsín was sensitive because he recognized it perfectly. The idea was precisely to reinforce the building of confidence with an additional step, to avoid by all possible means that the news would be disseminated before being communicated in that special and privileged way to President Alfonsín.

Therefore, everything was organized at the Planalto Palace, the Brazilian Presidency, and then Ambassador Paulo Tarso Flecha de Lima, who was deputy foreign minister, was informed. I travelled in an Air Force plane that made a stop at Porto Alegre. Upon arriving at the local airport in Buenos Aires, the Ambassador of Brazil and I went to see President Alfonsín at the official residence in Olivos. It was four or five o'clock in the afternoon.

We had a very pleasant chat, he read the document, gave his thanks, and then we had a conversation that even included the elections in Argentina. Since I had dealt with the Argentine issue for many years I continued the conversation with him and I believe that was a gesture, I do not wish to exaggerate the importance of it, but it was gesture that contributed even further to consolidate that process of confidence that was being built. I have really nothing to add

to the substantive aspects because, as I said more than once, I never dealt with that dossier.

Moderator:

Ambassador Saracho, do you recall how the government of President Alfonsín received the news of uranium enrichment at Aramar? Captain Ornstein, do you recall how was it received in the Argentine nuclear sector?

Saracho:

I was present and Under-Secretary of State Sabato, who was in charge of nuclear issues, was also there, but immediately after he reported to us the visit about the announcement and the analysis by the Argentine Ministry of Foreign Affairs was very positive. At least among us it did not arouse any fear. We considered it as a gesture of reciprocity.

Ricupero:

May I add that for people like myself, diplomats who followed the issue from the outside, the news that Brazil had finally mastered the enrichment cycle was a sort of compensation for the idea that Brazil was trailing behind Argentina in nuclear technologies. In this sense, our announcement helped us progress towards a bilateral agreement. Because as long as the perception in Brazil persisted that we were trailing behind the Argentines, it would be very difficult to persuade our constituencies to move forward.

It is as if we had tied the game. With the game tied, no one was ahead of anyone; it would be easier than before to freeze the situation. It represented the mastery of the perceptions. It could be that in reality things were not exactly so, but the Brazilian announcement helped us to say: "well, now that we are on a par with each other, let us forget it!"

Ornstein:

In the Argentine technical sector the announcement was received as something entirely natural. We already knew that Brazil had a contract with Germany for the construction of an enrichment plant using the doubtful "jet nozzle" system that only South Africa had fully utilized. That is, one way or another it was natural that Brazil acquired the enrichment technology. This also confirmed to us that the gas centrifuge was obviously a more appropriate technology and that Brazil had taken a sensible decision by concentrating its efforts on pursuing it. But this was the only kind of repercussion.

Castro Neves:

President Sarney thought it was important for Brazil to demonstrate that we had already acquired the capacity to enrich but what was more important was that such capacity should not be interpreted as being against our main neighbor and partner, Argentina. The idea of giving advance notice of this development to President Alfonsín came from Sarney himself.

The extensive report of Danilo Venturini to President Figueiredo on what had been done in the nuclear sector was the source used by his successor, Rubens Denys, for a presentation made to President Sarney in the presence of Rex Nazaré Alves and other CSN advisers. At that time Sarney was fully informed of all that was being done in the autonomous, "parallel" program. At the time the centrifuges were already turning, we were completing the first nuclear enrichment facility which was about the size of this room, at IPEN, in São Paulo.

Moderator:

In July 1987, the two Presidents visited Pilcaniyeu, opening the way to a number of mutual visits. In Brazil there were groups that did not want the meeting to take place because it would create the expectation of reciprocity at the Brazilian facility of Aramar (not safeguarded). We would like to hear what you

have to say on this issue.

Saracho:

I participated in the organization and in the visit itself. The idea came from President Alfonsín and it was immediately supported at the Ministry of Foreign Affairs. We then started to work on that possibility, which fortunately became true. President Sarney arrived at Bariloche with the best heart and spirit and the Pilcaniyeu facility was opened to him and his entourage, which was large, around one hundred people.

Everything went very well and the technicians responded to the questions that were put to them. Presidents Sarney and Alfonsín visited the facility under a bitter cold spell because July is the coldest month in Patagonia and they were freezing. In any case I believe it was fully successful, we had the opportunity to talk at length about several issues linked to the nuclear question. For us it was a very important political gesture, regardless of Brazil doing the same. We had conceived it as a unilateral gesture which was soon reciprocated.

Castro Neves:

As soon the invitation to Pilcaniyeu was received, the first reaction was "we will have to open Aramar". There was clear awareness of this. But to a certain extent, the Brazilian receptiveness was quite positive, quite good, because if they were showing us one of the most sensitive aspects of the nuclear fuel cycle, the isotopic enrichment of uranium, this meant that they wanted to have greater transparency with us.

In general, the reaction was positive, albeit qualified. But then our concern, as I mentioned here, was a little like "If I am going to see him naked and he is going to see me naked, I hope I will look prettier than him" (laughs).

Ornstein:

I participated in this visit and in all others. Later the visit to Aramar enrichment plant took place and soon after to the Argentine reprocessing plant in Ezeiza as well, and during all of them the climate was absolutely cordial. Both sides showed everything they had. Many of the technical explanations that were provided could not be easily understood by the Presidents and part of their retinues. It was a pleasant atmosphere. The position of CNEA was of total support to the visit, it seemed good to us and we provided all possible support so that it gave the expected fruits. These were really very satisfactory experiences.

Now I am curious about something and I do not know whether our Brazilian colleagues can clarify: what was the position of the Navy when Itamaraty decided to open the Aramar facility? We had profound doubt about whether the Brazilian Navy would accept to make this opening.

Castro Neves:

Well, let me split the answer. First of all, Rex was not worried about the visit by the Argentines; he was worried about his own role internally, within the scope of the Brazilian Nuclear Program. There were some people in the Program who did not like him and he spent a good part of his career struggling to be the uncontested leader in the nuclear sector since the creation of the autonomous program, which had brought him to the limelight.

Rex was very cautions with regard to any new initiative that might change the internal correlation of forces: "No, let's not rush, let's proceed slowly, let's see, let's think it through", a position that had nothing to do with Argentina. When CAPN was created and José Israel Vargas proposed the division of CNEN in two parts – a regulatory organ and a research and development institution – his first reaction was "they are taking off a part of my own flesh and blood". He felt as if he was being pushed against a wall. On the reaction of the Navy, it must be

said that there were no objections either from the Minister of the Navy, Admiral Saboia, nor from the manager of the nuclear program, the current president of Eletrobrás, Othon Luiz Pereira da Silva. Othon was perfectly self-assured.

There was in the Navy lower echelons, among naval engineers from the Navy, some jealousy, a certain attitude of "oh, we are going to open this thing, they will be looking at us". But both Othon and the higher authorities in the Navy took a quick decision that was not contested in any way. It was simply a little jerk of concern.

Moderator:

Ambassador Castro Neves mentioned that one of the concerns on the Brazilian side was that by opening the facilities to the other side it would be clear that they were less developed. What happened exactly when one side saw the other's facilities?

Ornstein:

The facilities were quite different. It was not possible to compare our perception, and here I come back to perceptions. From the technical point of view, our impression in Argentina was that we were more advanced than Brazil, although now I am learning that in fact it was the opposite. But at the time the perception was that we were somewhat ahead. The fact that Brazil opted in favor of the centrifuge technology was to a certain extent a reason for envy on our part because we were fully aware that it was a more modern and more effective technology than gas diffusion.

Moderator:

There was a visit of Argentine scientists to IPEN in December 1986. What is not clear to us is whether the idea of visits came from the technical sector rather than from the political-diplomatic group.

Ornstein:

These were cross visits carried out by technicians from both countries to several facilities besides more sensitive ones that were outside the safeguards and that were also very important.

Saracho:

The technical visits between Brazil and Argentina preceded by a long while the presidential visit by Sarney to Pilcaniyeu. There was already a very fruitful technical exchange between CNEA and CNEN. We have to put the visits in the political context that was covered in a very positive way by the international press. And basically this was what we wanted to achieve and to demonstrate: that Argentina had nothing to hide from Brazil.

Moderator:

Thank you. About the technical visits, did both parties have unlimited access, or not? How does this work in practice?

Ornstein:

I would say that in general they had unlimited access to all facilities. It is clear that there were details of the manufacturing process, of technological development that were not necessarily disclosed at that time at any of the installations. Enrichment facilities are extremely complex and to understand them one needs to be a technician.

On the other hand, there is no doubt that there is a certain level of industrial secret, since these are indigenous developments that have commercial value. Everything that could be disclosed was shown so that the other party could have a thorough idea of the dimension and capacity of the facility but this did not necessarily mean that we would show the whole plan in detail.

Wheeler:

I want to understand better the logic of this as a unilateral act from the Alfonsín government. I ask myself whether there is credibility to the idea that Alfonsín was trying to shed light on the Brazilian facilities by means of the expectation of reciprocity. Perhaps there was some "residual anxiety" on the Argentine side in face of the revelations at Cachimbo.

Saracho:

President Alfonsín's thinking was part of the Group of Six's and we were demanding nuclear disarmament from the United States and the Soviet Union. So we had to be coherent. The idea of opening up our facilities, therefore, was not a wild one, out of the blue. It was something we discussed at meetings with Secretary Sabato and Alfonsín. Of course we asked CNEA, which at no time showed resistance.

Now, we speculated indeed that the visit should be reciprocated, but the visit to Pilcaniyeu was not made under the assumption that there should be immediate reciprocity. For us it was a gesture that, as I mentioned, could seem a little hard, unilateral, but it must be understood within the context in which it was made. Argentina was having an important role in the Group of Six, trying to push forward the disarmament process between the superpowers. So Argentina had to give an example. And the speculation that there would be reciprocity was indeed considered, but it was not the main question.

Wheeler:

Do you think that the need to be reassured about the intentions of the Brazilian government was a significant motive for President Alfonsín and those closer to him, including yourself, when you were discussing all that? Was the logic of the wider context of the superpowers and the Argentine need to demonstrate good credentials in the Group of Six predominant?

Saracho:

Yes, but not only that. It was not a mere attempt to play a good role before the superpowers. Obviously we were already sure of our action in South America and both had and wanted to achieve good understanding with Brazil in this area. So, one of the parties had to take a political step, something that technically was happening for a long time already, but that had to go forward politically, in order to send a clear message to the wider world, and for this it was very important to open the facilities.

The issues of reciprocity and security were also considered. But these were not in the forefront, as I said. In no way the invitation to Pilcaniyeu was meant as a reason for Brazil to open its facilities. It was not felt that Argentina should fear any Brazilian intention to proceed to the atom bomb despite the declarations of certain Brazilian military. For this reason we thought it was important to create a climate of confidence.

Moderator:

Thank you. In September 1986 the Goiânia accident took place and Argentina offered help to Brazil. Do you recall the situation?

Ornstein:

Yes, I recall this episode perfectly. In fact, Argentina immediately dispatched, for immediate help, two of our best specialists in the effects of ionizing radiation on human beings with exposures beyond those allowed, as well as another specialist in the management of radioactive waste. They worked for a long time together with CNEN personnel to solve the problem. But there was an immediate response from Argentina. I think we had an agreement between the two commissions about providing cooperative help in the case of a nuclear accident. In reality, what Argentina did was to comply with its commitments contained in that protocol.[58]

Moderator:

Thank you. In November 1988 the two countries signed the Ezeiza Declaration establishing the creation of a joint project on fast breeder reactors. We would like to understand what happened with this project.

Ornstein:

I have this episode quite clear in my mind. The cooperation at the political and diplomatic level and the integration in the nuclear field were very successful indeed. Cooperation and integration in the technical field is something quite different. There was, and continues to exist, a need to find really motivating projects that interest the two countries, both technicians and authorities; not just declarations and minor projects, but also really important ones. At that time, the most qualified professional at CNEA made a visit to India and thought that a very long-term project of joint development of a fast breeder reactor could be of interest to both countries.

The idea was to invest ten years in design with paper and pencil in hand, as well as an exchange of ideas, accumulation of information, development of basic engineering, but envisaging the construction of a prototype to be financed by both countries. Argentina was totally open to this idea. The Brazilian side had only a couple of professionals who had been following the issue, but this was obviously a question of great interest in what regards the exploration of nuclear energy to produce electric power. This was accepted by Brazil, even being in an inferior situation in this aspect.

Then the everyday reality struck: budgets, limitations of trips to both countries, all those little things that make effective cooperation impossible. It seems that in neither of the two countries there was a political decision to engage in a project of that magnitude. So it all became a beautiful illusion on the part of the technicians of the two countries, and died slowly as time went by. It never prospered.

Chapter V

Legacies (1989-1991)

This panel is devoted to the legacies of Sarney and Alfonsín in the nuclear bilateral relationship. Participants discuss the full adherence of both countries to the Treaty of Tlatelolco and the creation of a common system of accounting and control of nuclear materials, as well as cross inspections. The panel then turns to the tenure of Carlos Menem in Argentina and Fernando Collor de Mello in Brazil as of 1989, and the process whereby the two countries joined the global regime of missile controls (MTCR) and to the Non-Proliferation Treaty (NPT).

FERNANDO COLLOR AND CARLOS MENEM MEET AT FOZ DO IGUAÇÚ TO SIGN THE MUTUAL INSPECTIONS AGREEMENT, 28 NOV 1990

Moderator:

How did the transitions from Alfonsín to Menem and from Sarney to Collor impact on bilateral nuclear cooperation?

Ornstein:

I was able to notice that the transition from Alfonsín to Menem in this particular field did not represent a substantial change regarding the philosophy of previous governments. The nuclear questions were conducted by people from the Foreign Ministry who were beyond singular political positions, and the search of rapprochement with Brazil was considered a matter of state. Therefore, once the new government took office, the process was resumed with much enthusiasm and motivation until what both Ambassador Saracho and I have already sketched: it became too quick.

We were conscious that in order to reverse positions held for many years takes a lot of time. A major effort has to take place in order to convince the other part in order to overcome strong internal resistances and accommodate the

MENEM AND COLLOR
AT FOZ, NOV 1990

positions of the sectors involved. So I would say that on the Argentine side this trend was simply expressed under Menem: a change of form or of procedure in order to accelerate all that had been accomplished during the Alfonsín government.

In reality, fertile ground was found because Collor de Mello and Menem, as well as the chairmen of the two atomic energy commissions, and both foreign ministries agreed to continue proceeding in that direction. In 1990, at the meeting in Foz do Iguaçu, we had arrived at the Declaration on Common Nuclear Policy. The commitment with the exclusively peaceful use of nuclear energy was raised and became concrete soon after with the so-called Treaty of Guadalajara, thus named for reasons of circumstance and opportunity, and that institutionalized what was being prepared previously: the reciprocal control of the nuclear activities of the two countries.[59]

At that time a moratorium was established and this concept is interesting because it was not that the two countries had renounced explosions for peaceful purposes in the event of achieving in the future the development of a technology suitable for it; what they established was an indefinite moratorium about the issue that involved a very serious commitment, but not a change in the philosophical position of both countries with regard to peaceful explosions.

Next, we looked, among Brazil, Argentina and Chile, for ways to adhere fully to Tlatelolco. If Argentina did not adhere fully it would be difficult for Brazil and Chile to do so, and vice-versa. So then Mexico adopted a very cooperative attitude: it interviewed the authorities of these three countries, and accepted to promote any amendments to the Treaty proposed by the parties involved in the negotiations.

This was followed by a meeting of the Tlatelolco signatory states and the amendments were approved without any objections, so this ended, fortunately, with the fully adherence of the three countries to that Treaty. But in addition to this, we took a further step making it compulsory to accept the full scope safe-

guards regime and that there would be no doubt about this subject since it was one of the requirements of the treaty. We committed ourselves to the negotiation of a full scope safeguards agreement with the IAEA which resulted in the Quadripartite Agreement: Argentina, Brazil, the IAEA and ABACC. I believe that this "police novel" had a very happy ending. From then on, everything was very fruitful in the nuclear cooperation field, also in the political-diplomatic aspect (although not as bright or intense in the technical field).

Saracho:

I fully agree. I was abroad at the time but I believe that the acceleration in the rhythm that in some cases was too quick for the Brazilian side but we finally arrived at an agreement. The acceleration of the pace which also led to the Argentine adherence to the NPT at that time did not seem appropriate to me. But in the end the result was positive. Now, I also agree with Captain Ornstein that there was some deceleration in the technical cooperation and this continues to this day.

I believe we can say that currently there is no significant difference between Brazil and Argentina in terms of nuclear development. Both Argentina and Brazil are fully aware of each other's plans and we believe that we are seeking together the development of nuclear energy for peaceful purposes that will bring only benefits to both peoples. I am convinced that this will go on.

Castro Neves:

I agree with the words of Captain Ornstein and Ambassador Saracho to the effect that once lingering doubts in increasingly isolated, minority sectors not representative on both sides were overcome there was indeed some acceleration, a defusing of the situation that allowed for cooperation between the technical sectors on the Brazilian and the Argentine sides. Now, at the end of this period a deceleration occurred for a very simple reason, the economic crisis that started to affect Argentina and Brazil at a time of hyper-inflation, disor-

ganization of economic activities, and loss of control over public finance on both sides.

Little by little, this led to the notion that it was necessary to cut expenses and nuclear activities were certainly very much impaired, both on the Argentine and on the Brazilian side. The adoption of the Convertibility Law (1991) which pegged the Argentine peso to the US dollar led to a drastic cut in public spending, something that also happened in Brazil and provoked paralysis in a number of public works projects. The Angra 3 plant in Brazil was stopped for several years due to budget cuts. Of course this did not prevent the continuation of contact and cooperation within ABACC which became the most important and representative instrument of nuclear cooperation Brazil-Argentina.

Moderator

Very little is known about the personal relationship between Collor and Menem. There are not enough memories, biographies or open documentation. Can you comment on this?

Ornstein:

My impression is that there was not the same empathy as between Alfonsín and Sarney. I believe the two of them supported the process because they were convinced that it was beneficial for the region and for the two countries. But I do not believe that there was a personal relationship beyond pure and cold protocol. I would like to make some additional comments.

To begin with, it is no secret that the relationship between Argentina and the United States has been very complicated throughout history. For many decades Argentina remained in the zone of British influence and felt sufficiently protected so as to confront the "colossus of the North", but our relationship was very bumpy at all times. During the Menem government there was a strong trend of opinion to reverse this situation, whose maximum figure was Guido

Di Tella who acted mainly as Foreign Minister in this period, and previously, for some time, Domingo Cavallo.

Both were totally in favor of improving relations with the United States to the point of coining that unfortunate expression from Di Tella of "carnal relations" with the United States. This may help explain a little the process of acceleration. The United States were very much interested in seeing a solution for the problem of those two rebellious countries from the Southern Cone that refused to join fully the non-proliferation regime. And from this point on all the suggestions, pressures and negotiations that we have seen before spurred.

Somehow, Foreign Ministers Cavallo and Di Tella were very sensitive to the American wish and this may have influenced them to increase the pace so much. This is my own interpretation but I believe it is fully valid. I am going to tell a funny anecdote about this: they wanted so much to accelerate the rhythm that after having satisfactorily negotiated Tlatelolco and practically created ABACC the hard nut to crack came up, that is the full scope safeguards agreement with the IAEA.

Brazil and Argentina wanted to follow the EURATOM (European Atomic Energy Community) model of 1953, which applies to all of the European Union countries. Tlatelolco has some very peculiar features that we wanted to make applicable to parties in the negotiation. We finally succeeded, but it was an extremely hard negotiation. It was developed by turns in Buenos Aires and Rio de Janeiro and I had the occasion to participate in both stages.

The head of the Argentine delegation was a brilliant career officer but he was so keen to accelerate the rhythm that he took the matter to such an extent that he ended by finding resistance within the Argentine delegation itself, not to speak of the Brazilians. Representing the IAEA was Dr. Mohammed ElBaradei, who later became Director-General of IAEA, and at that time was the head of international relations for the organization.

I recall a meeting here in Rio de Janeiro at the old Itamaraty Palace where things came to such an extreme that the Argentine, and above all the Brazilian delegations, were so mad at the head of our group that one of the Brazilians, very gifted for caricature, depicted ElBaradei as a camel mounted by the Argentine delegate who hurried it along.

It is only an anecdote but I want to show the prevailing spirit. Cooperation in the political field on nuclear issues was so great between 1990 and 1994, the year I was in Vienna, that we were a single delegation. Interventions at the IAEA were read in rotation by the Argentine governor and by the Brazilian one on behalf of the two countries – one did not open its mouth when it was being represented by the other. I drafted some 10 or 15 interventions during those four years that were read by a Brazilian lady Ambassador, a brilliant diplomat.

The empathy between both countries was so high that at a certain point, in front of the whole Argentine delegation, that Brazilian ambassador recurred to a usual soccer expression and asked me: "Are you a free agent?" (as if I were a soccer player who could be transferred from one team to another one).

Now, as Ambassador Castro Neves has noted, in the technical field he situation came to a point that when we foresaw travel abroad by technicians from the two countries and there were no funds for international travel we resorted to the trick of meeting in border towns; the Brazilians traveled to Foz do Iguaçu and the Argentine delegation went to Puerto Iguazu, on the Argentine side.

Then we crossed the bridge and met in either of the two places. There was also the question of technological difference between the two countries. This didn´t permit us to take a step further toward serious cooperation amid all those restrictions because there was no way to overcome all that.

Moderator:

Thank you. What was the interpretation from Brasília?

Castro Neves:

I was in Canada when I received instructions from Itamaraty to communicate to the Canadian government that Brazil had decided to accept and begin to implement the so-called full scope safeguards within the scope of the Treaty of Tlatelolco. I recall to have paid a visit to the Vice Foreign Minister of Canada, Louise Frechette, and when I mentioned *full scope safeguards* she jumped. *Full scope? Are you accepting them?* (laughs). She were more surprised than ever.

There were these movements both on the part of President Collor and President Menem to make peace with the international community, mainly in a context of the end of the Cold War. This context represented a huge encouragement for the so-called developing world, which included larger countries such as Brazil, Argentina, India, Pakistan and South Africa.

It was a time of transition and rapprochement with the order that had won, the Western order more open and more liberal, and it was also a decade of great codification of political and economic questions. The parameters of the Cold War that had afforded some room for maneuver to countries like ours had vanished.

So it was better for us to adhere to some extent to the order that had prevailed. It was the decade of creation of the World Trade Organization, the conclusion of the Uruguay Round, our adherence to the NPT. So in my view this is the background. In parallel we had the economic crisis, which worsened very dramatically.

Moderator:

Why, then, didn't the two countries adhere to the NPT at the start of the 1990's?

Ornstein:

It is obvious that this option was assessed but the conclusion was that things were not ripe enough. It was preferred to adhere to Tlatelolco, which seemed much easier since Brazil had already ratified it, as well as Chile. This was a relatively easy step. At the moment to speak about adhering to the NPT was more complicated; I would say that it was much more difficult for Brazil to take that course, as the facts later showed. So it was decided to go forward by stages and leave that as something to be dealt with in the future.

Rego Barros:

At the time there was no climate in Brazil for any bolder political play because President Collor had many revolutionary ideas but in a short while his political situation became so unstable that there was no way to take his ideas forward. And here I am going to jump forward a little because in 1995 I became Secretary-general of Itamaraty and Brazil ended by signing the NPT in 1998.

President Fernando Henrique Cardoso had been convinced a long time before. The government was sure of that. But there are powerful contrary arguments because the NPT has a discriminatory spirit. So it was not an easy decision and until today the Brazilian society asks why we did not negotiate some advantages in exchange for the signature.

Castro Neves:

In Brazil adherence to the NPT took some time. There was a process that lasted for two or three years due to the discriminatory character of the NPT and above all because of those who maintained an ideological position opposed to it. They said: "Why adhere to the NPT if the safeguards system in force is already the same as the one of the NPT? Maybe the adherence of Brazil was facilitated by the conditions put by the country for its accession to the MTCR, the Missile Technology Control Regime.

It was more difficult for Argentina to adhere to the MTCR, for instance. In this sense we in Brazil adhered to the NPT without much debate. As I mentioned, this was the time of the Washington Consensus and Rio-92. The NPT to a certain extent joined this bandwagon. We also have to keep in mind that in 1995 there were serious doubts about whether the NPT would hold or not. The Review Conference resulted in a series of charges. The Brazilian adherence also had its aftershocks: at the time of our accession India exploded an atomic bomb and Pakistan did the same in its wake. Many people said: "See, they carried out nuclear tests and nothing happened".

Moderator:

Thank you. To what extent did bilateral rapprochement facilitate access to sensitive technologies?

Ornstein:

Well, undoubtedly the peak of this process between Argentina and Brazil brought some benefits in term of technology transfer. We had an agreement in force with the United States that had been very effective in the 1960s, but lapsed after the change in American policy toward Argentina. With France we also had had a very fruitful cooperation agreement that was no longer in force and they did not want to negotiate because of the positions of Argentina.

Something similar happened to us with regard to Canada, which was a very important partner for us. In the years immediately following the culmination of the Argentine-Brazilian process of understandings in this field, agreements were quickly signed with the United States, France, and Canada to revitalize technical cooperation. But I shall make a reservation: in none of those cases this meant the transfer of sensitive technology. It was current technology in practically other levels: operation of research reactors, nuclear safety, etc.

Saracho:

I agree that in effect the periods that were described here following the Alfonsín-Sarney agreements brought the acceleration that was mentioned, somehow linked to the world context. So the fall of the Berlin Wall and the formation of the Russian Federation also resulted in the disappearance of the "Group of Six", which I had mentioned before, even as the arsenals of Russia and the United States kept growing. Yes, the joint attitude of the Argentine and the Brazilian delegations in Vienna had an important role in the reinforcement of the collaboration between the two countries. I must make it clear that the pressures did not stop. The United States today seek our adherence to the Additional Protocol to the NPT, and it goes on like that.

Castro Neves:

The pressures indeed diminished as we took steps in the right direction. Now, with regard to access to technology, access to the market of sensitive materials, it had its own dynamic and adherence to the regime did not facilitate things in any way.

Brazil didn't obtain increased access to anything that was under control because the market adopted ever-greater restrictions, especially after the introduction of the concept of dual use. Professor Leite Lopes, who was the director of the Brazilian Center for Physics Research (CBPF) used to say that a kitchen knife has dual-use, it can cut vegetables and murder someone. So, on the basis of that reasoning, access to equipment and technologies deemed sensitive continued on its way toward ever more limited access.

Moderator:

Thank you. In 1988 President Sarney visited the plutonium reprocessing plant in Ezeiza. We know that during the Alfonsín administration the construction of the plant was delayed due to budget problems and we also know that Presi-

dent Menem later closed it - and at least from the public relations point of view used that to show the international community that he was adhering to the Western liberal consensus. We would like to understand the decision to close the plant and to know what the reaction was in Brasília.

Ornstein

Work on the reprocessing plant was actually stopped a little before Alfonsín took office. The decision apparently was taken by the engineer Constantini, who was then the president of CNEA. But I believe it was a consensual decision, at least with the Argentine Ministry of Foreign Affairs that was perhaps seeking to reduce external pressures. I do not know whether it remained closed since, as you pointed out, but the funds were practically withdrawn and the ensuing stage of hibernation lasted for several years.

Now, it is worthwhile to make some comments about this plant. It was a pilot facility, where it had been possible to develop the whole technology and build the entire chemical procedure. The most important part was lacking, that is, the treatment and cutting of these irradiated fuel elements as well as the disposal of waste. Without that complement the plant could not function. I visited it several times and always felt proud about all that could be done despite all kinds of restrictions that had been imposed internationally on us.

I believe President Menem followed and supported the positions of his political entourage, in particular the thinking of the Ministry of Foreign Affairs. It is possible that it had been suggested to him that the permanent closing of that plant would mean a positive step and improve markedly the image of Argentina before the international community, in particular the United States.

I presume it must have been something like this, without much knowledge of what it was all about. Something similar happened to the Condor II missile, many years devoted to the development of a missile that could be used to take a satellite into orbit or in an extreme case to carry a nuclear weapon that we did

not possess. In this endeavor to improve our relations with the only dominant power at that time, after the demise of the Soviet Union, a regrettable maneuver was performed to turn over to the United States, through Spain, all the material that had been built (the delivery was not even made directly).

Moderator:

Can you explain this delivery?

Ornstein:

I think it was a clumsy political maneuver aimed at direct delivery of those missiles, engines and other parts from Argentina to the United States still in a context of strong anti-Americanism by a large section of the Argentine population. For a government that at the time had a large popular base it would have been a serious setback to be publicly seen delivering to the United States all that material that had been the result of a national effort of technological development.

Therefore a fictional scenario was put up: the material would be sent to Spain, a country that would not give rise to adverse reaction from the Argentine people, in order to be dismantled. Spain received the material and transferred it to the Unites States. The U.S. claimed that some component was missing and this made it obvious that the transit through Spain had only been a trick to avoid paying the political price of a direct transfer to the United States.

Fortunately the brains of the persons who had designed everything were in good shape and this allowed them to develop another missile not as dangerous on which safeguards or any other kind of restriction cannot be applied.

Saracho:

I would like to make a comparison. Foreign Minister Caputo had a great influence over President Alfonsín. Caputo's background was, let us say, socialist, he had been educated in Paris and in Sweden. Alfonsín listened attentively to

him on all subjects, not only nuclear or those related to Brazilian relations. During the whole conflict with Chile and the South Atlantic he exerted great influence over Alfonsín. This was fortunate because we closed a conflict that was going on for many years. I wish then to make a comparison with Menem's period. Menem had been born in the province of La Rioja, in the northwest of Argentina, and had studied in Cordoba. I also knew personally the man who was later his mentor, Domingo Cavallo, who had absolute influence over him.

Cavallo's training was in engineering and economics. He had studied at Harvard and had a clear pro-United States leaning. As the Captain has aptly expressed, this was not representative of the sentiment of most of the Argentine people.

But Menem had been elected by a large popular majority and this gave him *carte blanche* not only with regard to foreign relations and nuclear issues, but also in economic affairs. Argentine Foreign Minister Di Tella, with whom I worked personally, was also very much pro-American, pro-West. I wanted to make this comment that in a way confirms what Captain Ornstein has expressed.

Moderator:

Thank you. I would like to ask the Brazilian side whether the closing of the UF6 plant in São Paulo by President Collor in 1991 may be seen as a reaction to the closing by Argentina of the reprocessing plant in Ezeiza.

Castro Neves:

It may be understood that way. The uranium hexafluoride plant was a little more than a pilot plant. It had a reasonable production; its uranium hexafluoride was used in the first ultracentrifuge pilot plant. I do not know what was President Collor's motive to close the UF_6 plant at IPEN, but it could have been that. Maybe, because at that time UF_6 was not "*safeguardable*". The pro-

cesses for its production were public, there was not much mystery. The great problem of the reprocessing technology is radiological containment, since it deals with an extremely dangerous irradiated material.

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MATIAS SPEKTOR AND NICK WHEELER

At that time, to come back to the question of the missiles, there was a clear difference from Argentina with regard to our adherence to the MTCR. The perception we had then was that in order to adhere to the MTCR, Argentina had been forced to dismantle its whole missile program.

But Brazil preserved its satellite-launching program intact. It was located in the most faraway place from Argentina, initially called "Barreira do Inferno" in Rio Grande do Norte, and later Alcântara, in Maranhão. The stage of development of the Satellite Launching Vehicle (VLS) was quite reasonable. We also had smaller rockets, such as Piranha, which was sold to Argentina. There was also a VLS prototype that had a programming error at the base and the rocket landed close to Cabo Verde Island, to give you an idea of the range those things had. It was really a great scare at the time. But it was a VLS prototype.

Moderator:

Ambassador Castro Neves, on this point, do you have recollections of talks with the United States about the Brazilian space program? Why was there a difference in approach?

Castro Neves:

Well, I recall the conversations with the United States that led to our adherence to the MTCR within the parameters that we considered acceptable, that is precisely the preservation of the Brazilian VLS program. We gave all possible assurances that it was a satellite-launching program, that it did not have missile connotations.

But I guess that at that time it was signaled that an agreement with the United States might permit the use of the Alcântara launching base in Maranhão. The

only base that comes close to Alcântara and is almost as competitive is the Kourou base in the French Guyana, where the French launch their satellites.

Moderator:

Just to be absolutely clear, in this case then, the reason why Brazil and Argentina adhered to the MTCR in different moments was the difference in the respective programs. Was Argentina under a more immediate pressure than Brazil, so that the latter could negotiate its adherence a little more?

Ornstein:

Indeed. The Argentine problem was that Condor II missile had been primarily designed as a weapon with implications in the nuclear field. It also had aroused the interest of some Arab countries that even propose – although it never came to fruition – a joint venture with Argentina. In reality, the underlying motive was not the peaceful use of that missile, but quite the opposite. I know that the missile was under suspicions for several reasons, especially from the United States. For this I believe that the conditions for Argentina were much more stringent than in the case of Brazil, which had a satellite-launching program, even if this development could eventually grant it the ability to develop other kinds of missiles in the future.

Final reflections

This section brings together reflections from the participants at the end of the meeting. The excerpts were selected on the basis of their relevance for the understanding of the origin of the bilateral cooperation in the nuclear field, dealing more specifically with the role of the scientific communities, the transition to civilian rule, and the technological competition between the two countries.

Wheeler:

I believe that one of the most interesting issues that came out during the last few days was the role of the scientific and technical community in the cooperation that was established during the period. I would like to know how significant people believe this was to make the nuclear cooperation possible. In other situations, for instance between India and Pakistan, the same level of technical cooperation did not exist. In fact, the scientists have been very important in this case, but their contribution has been to push their countries into developing nuclear weapon programs, and not the opposite.

Ornstein:

I would like to add that nuclear cooperation developed among those in the technical community (more than those in the scientific) over many years in an absolutely informal and non-institutionalized way, by means of personal relations between people working in the nuclear sectors in Brazil and Argentina.

They get to know each other then and decided to take some joint project forward. By the 1980s this had created a situation of personal relationship among different experts that obviously facilitated the next step, the institutionalization of cooperation on both sides. This was not determining of the whole process, but I believe it greatly facilitated things.

In the case of Argentina, I would say that the scientific community – and distinguish it from the technical people working in the program because the backgrounds and the thinking among these two communities are quite different –was at all times against the development of nuclear weapons. In Brazil one of the key figures was Professor José Goldemberg.

In the case of Argentina, the scientific community was bound to be more subject to pressures coming from the political class above. But the fact is that there never was a group in Argentine politics seeking to push or encourage the development of nuclear weapons.

What existed on the Argentine side, and this I can state clearly and in full conscience – and the facts demonstrate the same on the Brazilian side – was a strong desire not to be restricted in absolutely nothing that could be an option within the uses of nuclear energy: explosions for civil engineering purposes, development of electricity generation from nuclear sources, etc., but military uses were never in the cards.

Evidently, seen from the outside, one might argue that this was extremely close to military uses, since the development of an explosive for peaceful purposes is one step away, even if it is not a weapon, one step away from being one. I recognize that the inspiring leader of this position was France, keeping the respective differences between Argentina and France.

I had the opportunity to accompany on a visit to Argentina one the most eminent French nuclear scientists, who later worked in Project Manhattan and then returned to France (I believe it is said jokingly that he took two kilograms of plutonium in his suitcase). And the IAEA was chaired by France for many years. I escorted him from the airport and we started talking and he said: "See, Captain, you do not know how hard it is for me, as the French Governor at the Agency, to attack your positions when during all my life I defended exactly the same postures as you do". I replied: "Well, the French position of not accepting any kind of restrictions in this field was the inspiration for the Argentine posi-

tion, without aiming and never having aimed at the development of nuclear armament".

Wheeler:

There was considerable concern, not only in the United States, but in the non-proliferation community about the nuclear programs of Brazil and Argentina. Leonard Spector and others in the US nuclear non-proliferation community were constantly producing reports and articles about Argentina and Brazil as being threshold or near-nuclear states. Having participated in this fascinating critical oral history workshop, I'm left with the question: why were people in the United States making such blown up allegations about those programs? What led them to this?

And I am tempted to ask a key counterfactual question: if both countries had acquired the capacity to enrich significant amounts of uranium at above 90% by the end of the 1970s, would the game have been different? Would military leaders on the Brazilian side have pressed more strongly to go forward with a weapon? Or would the pressures for non-proliferation have been strong enough to prevent an escalation into weaponization which Argentina would surely have followed? I ask this question because the competition around Itaipu did not become translated into the nuclear dimension of the Argenine-Brazilian rivalry.

Rego Barros:

It is very difficult to reason about this kind of hypothesis, especially for a diplomat. But I believe that this race between Brazil and Argentina was not something that involved the whole country. I believe it was very much concentrated at the military level.

Had there been greater technological development, I still believe it would have been difficult to arrive at the construction of a device because the countries

would need to devote a large part of their budgets to that objective. This is a very expensive endeavor.

Castro Neves:

I agree with Ambassador Rego Barros. It is really difficult to talk about hypotheses. I feel now like a character from Bernard Shaw who used to say "how can I know what I think before I hear what I say". But really, if Brazil had mastered the nuclear fuel cycle and was in a condition to prepare something…what we are saying is that Brazil would not be Brazil and neither Argentina would be Argentina.

There is another important element: already at the end of the 1960s, Brazil was the second largest trading partner of Argentina and Argentina was the fourth most important trading partner of Brazil. There was already a considerable intertwining of interests that could be seen in tourist exchanges. So there was already some integration regardless of the states, it was made by society. The result was that the state rhetoric was exactly that – rhetorical. To the extent that the bases of this rhetoric of rivalry started to be deconstructed all that began to disappear, to shatter. And those manifestations became increasingly an exception, and not the rule.

Wheeler:

Perhaps we could concentrate on the importance of democratization and on the importance of the transition from the authoritarian regime in both countries. I wonder how important you think democratization was for the process of cooperation? And the next question would be, whether you believe that specific kinds of civilian leader were necessary for the rapprochment; in other words, were the personalities of Sarney and Alfonsín really crucial to the process? Or, would any civilian leaders that found themselves in positions of power in the two countries at this time have pursued similar policies?

Ornstein:

The democratization process brought legitimacy. In the Argentine case there are many examples. The negotiation of the Plata River with Uruguay was analyzed during a long time by the Argentina military government, which in the end did not make a commitment because it felt it lacked the necessary legitimacy. The military thought a civilian government at a later stage and with the necessary legitimacy should be responsible for moving forward on such a delicate issue.

I think that something similar happened in the case of the transition to Alfonsín. In the case of the border problem with Chile, this is clearly seen: the democratic process was what gave legitimacy to the proceedings that led to its solution, since that process has all the real power to adopt measures of a historical character since such measures do have a weight on the history of the two countries.

Now the other question is more complicated, because I believe that the personalities of Sarney and Alfonsín had a very important role. I respect the role of personalities in the democratic process. We have a very clear example of the participation of some civilian leaders, like Alfonsín and Sarney, who took this process forward, but we also have the example of two rulers who did not have a strong interpersonal relationship, or direct involvement in international relations, such as Menem and Collor, but who somehow accelerated and concluded the process of nuclear rapprochement. So it will be difficult to arrive at a conclusion.

Saracho:

I believe that democratization really provided a very important push and that the friendship and understanding between Sarney and Alfonsín was even more important. The strength of Argentine democracy was a great help. Therefore, I believe that the democratic process helps because the rulers felt legitimate. And this is effectively what happened between Sarney-Alfonsín and Collor de Mello

and Menem, who continued this process being democratic governments.

Moderator:

To what extent was the mutual perception of a relative technological balance between the two countries a precondition of cooperation?

Ornstein:

I will speak of the perception we had from the Argentine side. There was – and I believe our Brazilian colleagues will accept this – in the first stages a greater Argentine advancement in the nuclear sector. Perhaps because it was quite a sensible process in the sense that there was not the intention to take forward a spectacular project such as the one of Brazil and Germany, but rather step by step. It began with a power plant, only after it was built and operating we thought of a second one, then of a third, etc. It was a process within the economic and technological capabilities of the country.

This allowed us, in the first few years, to open some advantage, I would say as many as ten years between the two programs. In the face of resistances to nuclear cooperation, our perception was that our Brazilian brethren would feel much more comfortable to negotiate with us when there would be a real parity between the two nuclear programs, but this perception can be very much mistaken. It is hard for Brazil to accept sitting at a negotiating table in a position of "inferiority", in this case technological. Parity undoubtedly would facilitate a dialogue.

And I believe it was so. As Brazil developed its nuclear program, and now let us be honest, it surpassed Argentina, this facilitated dialogue considerably because they were two partners that could speak as equals, *mano a mano*, in the same footing in this field. For this reason I believe the answer is yes, this facilitated dialogue to a very large extent.

Castro Neves:

In our attempts to know in greater detail the level of nuclear development of Argentina we came to a basic conclusion: they were ahead in the technological, or research area even because of the continuity of the process of nuclear energy policy in Argentina. There was, on the other hand, a very serious limitation in the industrial base on the part of Argentina that did not exist in Brazil any longer.

We examined the question of Pilcaniyeu and decided that although they had mastered the technological aspects of the process they possibly would not be able to attain industrial scale because of the lack of a basis that would allow them to manufacture the components, the compressors, etc. for the plant. In the case of our centrifuge plant, it was entirely built by Brazilian private companies. By the way, the only state corporation that became part of the process, the Navy Arsenal in Rio de Janeiro, manufactured the containers for uranium hexafluoride, nine of which went on a short trip to China.

Saracho:

If I could summarize these two days I believe that the conclusions we have arrived at, both Argentines and Brazilians, are that, without any doubt we were dealing with a specific nuclear theme and also to other in which the two countries are clearly called to cooperate. Obviously there are divergences, as in any kind of coexistence, but we agree about what is essential and we shall continue so.

I am absolutely confident that the Argentina-Brazil relationship in the nuclear field can only increase to a better level, for the benefit of the two countries. There are questions that we have to explore jointly creating common companies having in mind the external nuclear market and this is something for which we are qualified. For us, there is no better way to export nuclear technology than to do it jointly with Brazil.

To give one last example, the export of test reactors to Australia, that has unique

characteristics, Argentina won the tender in competition with the main suppliers in the world. It would be very interesting to follow in these footsteps in cooperation with Brazil on the basis of equality. I believe we have a bright future in common and that suspicions have been left behind – and that it will continue to be so. I just wanted to say that this meeting has been a very useful forum to analyze the issues that we discussed. Thank you.

Ornstein:

Having been an active participant in this long process during 30 years, this meeting has opened new vistas for me because it has allowed me to understand many aspects that were seen from only one side when they occurred and seemed obscure or hard to understand. I am indeed convinced that this meeting has been for me a sort of opening into a new world by shedding light on a number of episodes intensely experienced, some of which had somehow remained in the shadows for me.

I am really deeply grateful to the organizers for inviting me to participate in this exceptional event that I cannot classify in any other way.

I think that the confidence building process between Brazil and Argentina was an exceptional event for the whole world. We cannot forget that the historic relationship between our two countries was permanently one of conflict. This extended over time without leading to any really serious confrontation.

The way in which border disputes were resolved between both countries – even if the process has been much criticized in Argentina, was indeed exemplary. All of this establishes a context which we cannot dismiss. Afterwards things became diluted in such a way that a kind of reciprocal rivalry remained between us but I believe never went beyond soccer, as Ambassador Rego Barros has aptly expressed, is it not?

And I have a very personal anecdote in this respect. My father was the director

of the Argentine Football Association in the 1930s, at the time the President of Brazil was Getúlio Vargas and the Argentine national team came to Rio to play. It never won against Brazil and I do not know why it won that time.

There was such a rage from the spectators that the Argentine delegation and the team had to be escorted from the field by the personal guard of Getúlio Vargas and was taken by them to the hotel in order to save them, so to speak, from popular ire. On this we will continue to be rivals throughout life, but I believe it is merely this, and that there will not be problems in other fields.

Castro Neves:

Yes, I believe that there was so much coincidence here among ourselves who have negotiated with Argentina in some way or another in several stages and in some moments we even agreed. I fully agree with the comments of Adolfo Saracho and Roberto Ornstein that nowadays there a joint challenge rather than something we can develop in isolation in an increasingly globalized and much more interdependent world in which the problems of Argentina are also our problems. So as a colleague already said, cooperation between Brazil and Argentina is not an option, it is an imperative.

(Endnotes)

1. Nicholas J. Wheeler, Trusting Enemies (under contract with Oxford University Press).

2. Between 1967 and 1979, Brazil and Argentina were engaged in an acrimonious legal and diplomatic battle over the use of international waters in the River Plate basin. The dispute was sparked by Brazil's decision to build the Itaipu hydropower plant in association with Paraguay on the Paraná River, a mere 17 kilometers upstream from the Argentine border.

3. During the Cold War, Brazilian military planning foresaw three alternative conflict scenarios: Alfa, Beta and Gamma. Alfa foresaw guerrilla war in the Brazilian backlands; Beta predicted conventional war against a country in South America, most likely Argentina; and Gamma saw Brazil engulfed in major power war between "communist" and "democratic" powers.

4. Jorge Federico Sábato was in charge of nuclear negotiations with Brazil at the Argentine Ministry of Foreign Affairs during the early years of the Alfonsín administrations. Not to be confused with his uncle, the nuclear scientist Jorge Alberto Sábato, an official at CNEA.

5. INVAP is a joint venture between the Province of Rio Negro and CNEA for the provision of equipment for the Argentine nuclear and space programs.

6. James Blight, James G. Allyn, Bruce J. Welch, Cuba on the Brink: Castro, the Missile Crisis and the Soviet Collapse (Pantheon Books, 1993).

7. Andrew Hurrell, "An Emerging Security Community in South America?", in Emmanuel Adler and Michael Barnett, Security Communities (Cambridge University Press, 1998).

8. Rodrigo Mallea, La cuestión nuclear en la relación argentino-brasileña. MA dissertation (IESP/UERJ, 2012).

9. Carlo Patti, Brazil in Global Nuclear Order. Ph.D dissertation (University of Florence, 2012).

10. The "Pampa Plan" was Argentina's military concept to guide a hypothetical war with Brazil. It set out to ensure the Argentine provinces neighboring Brazil would never build

bridges or roads that might facilitate the offensive in case of a Brazilian attack.

11. The U.S. Secretary of State Cyrus Vance visited Brazil on 23rd November 1977 and Warren Christopher, Under-secretary of State, did the same on 27th November 1977.

12. See, for example, Brazil Scope Paper: Implications of the Argentine Visit. 30th November 1977, Azeredo da Silveira Archive, CPDOC/FGV, 1974.04.23. For an analysis, see Matias Spektor, Kissinger e o Brazil (Zahar 2009) and Rodrigo Mallea, op.cit.

13. In 1968 Argentina signed a contract with Siemens for the construction of Atucha, its first nuclear (heavy water and natural uranium) plant (350mW).

14. Interview with Oscar Camilión, Veja magazine (Brazil), issue 491, February 1978.

15. Hélio Jaguaribe, O nacionalismo na atualidade brasileira (Instituto Superior de Estudos Brasileiros, 1958).

16. The reactor RA-1, of 40kW, of the "Argonaut" type became operational on 17th January 1958. It was the first research reactor ever built in Latin America.

17. For a detailed analysis of the Argentine-Brazilian relationship regarding Itaipu, see Matias Spektor: Ruptura e legado: o colapso da cordialidade oficial entre Brasil e Argentina. Master dissertation (University of Brasília 2002) and Archibaldo Lanus, De Chapultepec al Beagle: Política Exterior Argentina, 1945-1980 (Emecé, 1982).

18. The agreement contained three principles: exploration of the natural resources of one State should not cause harmful effects in areas beyond its national jurisdiction; cooperation should be carried out by means of the provision of information and official data from one State to the other about projects in international waters and everything should be done under the best spirit of cooperation and good neighborhood; this should not be interpreted as the right of one State to delay or render difficult the activities of the other State.

19. The Treaty of the Plata River was signed on 19th November 1973 between Argentina and Uruguay, setting explicit national limits to the river.

20. On the policy of the Carter government toward Brazil, see Matias Spektor, Kissinger e o Brasil (2009).

21. See Julio Carasales, De Rivales a Socios: El proceso de cooperación nuclear entre Argentina y Brasil (Nuevohacer, 1977) and Rodrigo Mallea, op. cit.

22. Exposição de Motivos, secreto, Conselho de Segurança Nacional, 8th September 1974. Azeredo da Silveira Archive, CPDOC/FGV.

23. Handwritten note from Paulo Nogueira Batista to the Ministry of External Relations, 24th November 1976. Archive Paulo Nogueira Batista, CPDOC/FGV.

24. INFCIRC (Information Circular) 237 from IAEA was published on 6th May 1976 containing the terms of the safeguards agreement between Brazil, the IAEA and the Federal Republic of Germany.

25. Camilión is referring to the cable that the Argentine embassy in Brasília received on 20th December 1978 containing instructions to inform the Brazilian government that Argentina was formally at war with Chile. See Oscar Camilión, Memorias politicas, de Frondizi a Menem (1956-1996) Planeta, 2000.

26. In 1977 Argentina and Peru signed a contract establishing the sale of an Argentine nuclear research reactor to the Peruvian Institute of Nuclear Energy, the first nuclear export of this kind in Latin America. Argentina undertook to supply the nuclear fuel for the Peruvian reactor through a triangular operation: the United States would supply the fuel to Argentina, whose authorities would then ship it to Peru.

27. In 1978 the Argentine government authorized the construction of a uranium enrichment plant by gaseous diffusion in the region of Pilcaniyeu, in the province of Rio Negro.

28. See “Argentina domina técnica e pode produzir a bomba”, Folha de São Paulo, 19th November 1983.

29. INFCIRC 66 was approved by the Board of Governors of the IAEA in 1965. In practice, countries that at the time were not parties to the NPT such as Argentina and Brazil had safeguards with the IAEA along these lines to carry out nuclear contracts with suppliers of nuclear materials and technology. INFCIRC 153, which was approved in 1972, contained the terms of the applicability of Article 3.1 of the NPT and envisaged full scope safeguards on all nuclear activities to member states to the regime.

30. Hélio Jaguaribe, op. cit.

31. The Brazil Embassy to London represented Argentina interests there from July 1982 to February 1990.

32. The third person is Germán López, a professional chemist and Secretary General of the Presidency of Argentina in the Alfonsín administration.

33. In reference to Patricio Aylwin, a Chilean who opposed the Pinochet regime and eventually became a democratically elected president for the period 1990-1994.

34. Abdenur a Guerreiro, secreto, 10th January 1985, AHMRE/Brazil.

35. "Los riesgos de quedar fuera del negocio nuclear", Somos magazine (Argentina), 19th September 1987.

36. In his capacity as president-elect Tancredo Neves traveled to Portugal, Italy, France, Spain, United States, Mexico and Argentina (Jan-Feb 1985).

37. The Group of Six was created in May 1984 within the United Nations Disarmament Commission by the leaders of Argentina (Raúl Alfonsín), India (Indira Gandhi), Mexico (Miguel de la Madrid), Tanzania (Julius Nyerere), Sweden (Olof Palme) and Greece (George Papandreu). Together, they advocated for the suspension of production, testing and emplacement of nuclear weapons, as well as the reduction of existing arsenals.

38. Note by Ambassador Saracho to Secretary of State Jorge Sábato, secret, 14th May 1985, AMRECIC/Argentina.

39. Setúbal to Sarney. Information paper to the President of the Republic no. 108, confidential, 29th October 1985, AHMRE/Brazil.

40. Admiral Emilio Massera was one of the three Heads of the Argentine Military Junta between 1976 and 1978.

41. "Leônidas: Brasil deve fabricar bomba", Correio Braziliense, 1st September 1985.

42. Embassy of Argentina in Brazil, secret cable, number 1311, 1st September 1985, AMRECIC/Argentina. Note from the Embassy of Argentina in Brazil, secret, 2nd September 1985, AMRECIC/Argentina.

43. Under the auspices of the Brazilian government the Treaty on Amazon Cooperation was signed on 3rd July 1978 by Bolivia, Brazil, Colombia, Ecuador, Peru Guyana, Surinam and Venezuela.

44. Between 1983 and 1988 there were four insurrections against the Alfonsín government. Three of them were directed by a faction of the Argentine Army named carapintadas (April 1987, January and December 1988). A fourth one was sponsored by a guerrilla group (January 1989).

45. Mario Mariscotti, El secreto atômico de Huemul (Sudamericana-Planeta, 1985).

46. Paper to the Head of DEC, secret, 30th April 1985, AHMRE/Brazil.

47. The ABC Pact refers to the Non-Aggression, Consultation and Arbitration Pact between Argentina, Brazil and Chile of 25th May 1915. In February 1953 Argentine President Juan D. Perón (1946-1955) sought to negotiate a similar agreement, but to no avail.

48. Paper to the Head of DEC, secret, 30th April 1985, AHMRE/Brazil.

49. Overflight of a Brazilian military aircraft over Pilcaniyeu, secret, 10th October 1985, AMRECIC/Argentina.

50. "Brazil prepares location for nuclear test", Folha de São Paulo (Brazil), 8th August 1986.

51. The Brazilian government handed a non-paper to the Argentine Ministry of Foreign Relations indicating that the boreholes at Serra do Cachimbo would be used as repositories of nuclear waste and its secret nature was due to the resistance of civil society environmental organizations against nuclear repositories.

52. Fernando Collor organized a public ceremony at Cachimbo on 18th September 1990.

53. The radiological accident with Cesium 137 at Goiânia occurred in September 1987. CNEN registered exposure to the material by 112.800 people.

54. "O Brasil poderia ter sua primeira bomba em 1990", Folha de São Paulo (Brazil), 28th April 1985.

55. "Admiten que militares brasileños planearon unba bomba atómica", La Nación (Argentina), 8th August 2005.

56. On the occasion of the visit by President Alfonsín to the enrichment plant at Aramar the Declaration of Iperó was signed with a view, among other things, to raise the Working Group to the level of a Permanent Committee holding meetings every four months.

57. Mission by Ambassador Rubens Ricupero, secret and urgent, 4th September 1987, AHMRE/MRE.

58. In July 1986 the Brazilian and Argentine governments signed a string of treaties, including a Protocol on "Prompt notification of nuclear accidents and mutual assistance in case of a nuclear accident or radiological emergency".

59. The Treaty of Guadalajara was signed on 21th August 1991 by Argentina and Brazil to establish the Brazil-Argentina Agency for Accountability and Control (ABACC).

Chronology

1967

February

• Latin American countries produce the Treaty of Tlatelolco banning nuclear weapons from the region.

• General Arthur da Costa e Silva, appointed president of Brazil by the ruling military junta, visits his Argentine counterpart Juan C. Onganía before taking office.

September

• Brazil proposes the beginning of negotiations for a nuclear agreement with Argentina. The Argentine National Atomic Energy Commission (CNEA) remains skeptical due to "negative experiences" in the past.

December

• President Uriel da Costa Ribeiro of the Brazilian National Nuclear Energy Commission (CNEN) travels to Argentina for the inauguration of the Atomic Center of Ezeiza. He expresses interest in nuclear cooperation, to which CNEA agrees, but the Argentine Foreign Ministry blocks the initiative.

1968

March

• CNEA scientist travels to Brazil to be briefed on a potential nuclear cooperation proposal.

June

• The NPT resolution passes in the United Nations General Assembly with a vote record of 95 votes in favor, 4 against and 21 abstentions. Brazil and Argentina abstain.

September

• Brazilian embassy in Buenos Aires inquiries the government of Argentina about possible acquisition of 5 tons of uranium.

December

• CNEA approves the sale of Argentine enriched-uranium to Brazil.

• CNEA's President Oscar Quihillalt tells President Onganía and Foreign Minister Costa Méndez that Argentina should sign on to the NPT.

1969

January

• An internal report of CNEA reports that Argentine Foreign Ministry has no interest in transferring uranium to Brazil for "political reasons".

December

• CNEA formally supports the negotiation of a

nuclear cooperation agreement with Brazil.

1970

• Brazilian President General Emílio Garrastazu Médici gives green light to nuclear talks with Argentina and foreign ministries draft the text.

March

• The NPT comes into force. The International Atomic Energy Agency establishes a safeguards system for treaty members.

1974

May

• India conducts its first nuclear explosion. Brazilian Foreign Minister Antonio Azeredo da Silveira tells President Geisel that Argentines have the political will and technical capacity to follow the Indian path.

June

• The director of the Atucha nuclear plant visits Brazil and expresses interest in the exchange of information and experience.

July

• A delegation from the Brazilian Superior School of War visits the Atucha plant in Argentina. Atucha's director expresses interest in bilateral cooperation and states that Argentina has no intentions of building a nuclear weapon.

• The U.S announces that it will only honor contracts for future sales of nuclear fuel pending availability, affecting Brazilian plans for future purchases for the Angra plant.

• Brazilian Foreign Ministry asserts that starting talks with Argentina for a nuclear agreement to mitigate global suspicion of a regional nuclear race would be of "political convenience".

September

• President Geisel of Brazil states that any progress on nuclear talks with Argentina would move forward only after the Itaipu dispute is resolved.

1975

June

• Brazil signs a nuclear agreement with West Germany that includes the construction of 8 nuclear power plants and the transfer of uranium-enrichment technology. The Argentine government expresses concern to the West German embassy in Buenos Aires.

1976

February

• Brazilian Foreign Minister Azeredo da Silveira says that Itaipu is "the only pending litigation" between the two countries.

•Brazil, West Germany, and the IAEA sign a safeguards agreement. It's the first time that a non-NPT member like Brazil signs such an agreement.

May

• The Argentine military Junta send Oscar Camilión as Ambassador to Brasília to negotiate the Itaipu dispute. Camilión regularly meets with Hervásio de Carvalho of the Brazilian Nuclear Commission and Paulo Nogueira Batista of the state-company Nuclebras.

September

• At the 21st IAEA conference in Rio de Janeiro, Argentina and Brazil discuss mechanisms to mitigate global suspicion of their nuclear intentions, but talks don't progress.

December

• Argentine Foreign Minister César Guzzetti points out that his country wants to find a solution to the Itaipu dispute and speaks of Argentina's interest in a bilateral nuclear cooperation agreement.

1977

February

• The Brazilian embassy in Canada sends a cable to the foreign ministry in Brasília, reporting that an informant said that Argentina will come out in support of the Brazil-West Germany nuclear agreement (at the time under growing opposition from the United States).

• Castro Madero of CNEA publicly declared his support to the nuclear agreement between Brazil and West Germany.

August

• Castro Madero speaks of advanced nuclear talks leading to a bilateral agreement.

• A delegation of U.S Congressmen visits South America. Congressman Paul Findley (Republican-Illinois) meets with the authorities of CNEA and the Brazilian Foreign Ministry to discuss a system of bilateral inspections that may mitigate international concern about their nuclear programs.

September

• The Washington Post publishes U.S. Congressman Paul Findley's proposal of, including mutual inspections and a joint commitment to renouncing to nuclear explosives.

• Findley presents his proposal to Argentine President Videla and to Brazil's Vice-President Pereira dos Santos in Washington on the occasion of the signing of the Torrijos-Carter treaties on the Panama Canal.

• Argentine Foreign Minister Montes is optimistic about the idea of creating a bilateral system of mutual inspection with Brazil. Nevertheless, Brazil's Foreign Ministry discards Findley's proposal.

November

• In negotiations with US Secretary of State Cyrus Vance Argentina agrees in principle to ratify Tlatelolco Treaty and postpone the

construction of a reprocessing plant if Brazil does the same. Vance visits Brazil but fails to secure an understanding there.

1978

February

• Camilión publicly defends Brazil's right to developing an indigenous nuclear program free from the constraints international safeguard agreements.

March

• U.S Congress passes the Nuclear Non-Proliferation Act, which establishes conditions for transferring nuclear technologies to third countries, such as becoming a member of the NPT and adhering to the IAEA's safeguards agreements.

1979

February

• Argentina starts the construction of a pilot plant for uranium reprocessing at Ezeiza.

March

• In a press conference, Castro Madero states that Argentina could build a nuclear weapon if it wanted.

August

• Brazil's foreign ministry suggests adding nuclear cooperation to the agenda of the Brazilian-Argentine Special Commission for Cooperation. Argentine authorities replied that the dispute over Itaipu must be resolved first.

September

• Argentina hires KWU-Siemens for the construction of Atucha II and Sulzer Brothers for the construction of a heavy water plant.

October

• Argentina, Brazil and Paraguay sign an agreement ending the dispute over Itaipu.

1980

January

• Brazil signs a nuclear framework agreement with Iraq.

• Castro Madero delivers a proposal of nuclear cooperation, scientific exchange and technical consultations to his Brazilian counterparts.

March

• The Non-Proliferation Act comes into force mandating the suspension of US nuclear technology exports to non-members of the NPT like Argentina and Brazil.

April

• CNEA and CNEN discuss the terms of a nuclear cooperation bilateral agreement in Rio de Janeiro.

May

• Joao Figueiredo travels to Argentina in the first presidential visit between the two countries since 1935. Whilst there, he signs with his

counterpart Rafael Videla the first bilateral agreement on nuclear cooperation.

August

• Videla visits Brazil, and CNEA requests a mechanism for uranium-leasing between the argentine institution and Nuclebras.

1981

May

• Figueiredo meets Argentine President Roberto Viola, and Castro Madero declares that the nuclear relationship between the U.S and Argentina is "bad". He also says that Argentina will pursue talks with the USSR for nuclear-fuel purchases.

1982

April

• Argentina launches a surprise attack on the Malvinas/ Falkland´s Islands. Brazilian intelligence services conclude that it is impossible to determine whether Argentina has the capacity or the will to build a nuclear device. Brazil condemns Argentina's military action but supports the Argentine legal claim on the Islands.

June

• Argentina surrenders after being defeat by Great Britain, and it asks the Brazilian embassy in London to represent its interests there.

July

• The Washington Post accuses the U.S. of secretly allowing the export of computer system to be used in the Argentine heavy water plant built by Sulzer Brothers Ltd.

December

• Brazil purchases enriched-uranium from China, while Argentina buys heavy water.

1983

May

• The Inauguration of Embalse, Argentina's second nuclear reactor.

• Upon visiting Argentine nuclear facilities, U.S. Ambassador Richard Kennedy authorizes the shipment of US-produced heavy water to Argentina.

August

• The U.S Department of Energy authorizes EURATOM's request that West Germany may transfer to Argentina 143 tons of U.S. produced heavy water to be used in Atucha and Embalse.

• Richard Kennedy visits Brazil for a meeting of the U.S-Brazil Working Group on nuclear energy.

• Darío Gomes (Nuclebras) and Rex Nazareth (CNEN) visit Argentine nuclear facilities.

October

• According to a CIA's report, there is no evidence of a program of nuclear weapons in

Brazil.

November

• Argentina officially announces that it mastered the technology of uranium enrichment at Pilcaniyeu. Before going public it sends a letter to Brazil (to the IAEA and all UN Security Council permanent members, except for the United Kingdom) . President Figueiredo of Brazil writes back to congratulate Argentina.

• President-elect Raul Alfonsín of Argentina says that his administration will impose civilian control over nuclear activities.

December

• Brazilian Foreign Minister Ramiro Saraiva Guerreiro and his Argentine counterpart Dante Caputo meet for the first time and agree to elaborate a joint declaration to "help to dissipate suspicions of possible military components of their countries nuclear programs".

• Argentine President Alfonsin's speech at the Argentine Congress emphasizes the peaceful purposes of the Argentine nuclear program.

1984

January

• A U.S. diplomat tells an Argentine counterpart in Washington that U.S.-Argentine nuclear relations "would improve substantially" if Argentina and Brazil publicly renounced the right to building nuclear explosives and suggested the adoption of a mechanism of mutual inspections.

• Alfonsín creates a committee to investigate CNEA's activities and concludes that nuclear policy under the military government had been exclusively designed for peaceful purposes .

February

• Argentine Foreign Minister Caputo announces at the U.N Disarmament Commission the idea of promoting nuclear disarmament worldwide. He states that Argentina will not sign the NPT, but that his government will consider the ratification of the Treaty of Tlatelolco.

May

• Brazilian diplomat Roberto Abdenur unofficially proposes to his Argentine counterpart Jorge Sábato a joint declaration in which the two countries would renounce to nuclear explosions.

• Brazilian Foreign Minister Saraiva Guerreiro informs President Figueiredo that budgetary cuts to Brazil's nuclear program will negatively affect its standing vis-à-vis Argentina's program.

October

• In the foreword to his book, *Nuclear Proliferation Today* (Vintage Original Press), Leonard Spector states that Argentina and Brazil are "just a few years short of acquiring weapons of mass destruction."

1985

February

• Brazilian elected president Tancredo Neves visits Argentina and meets Alfonsín, who suggests a 'regional nuclear safeguards system'.

March

• Alfonsín talks about a bilateral safeguards agreement with Brazil rather than a region-wide scheme.

April

• Brazilian newspaper *Folha de São Paulo* quotes an anonymous source: 'Brazil should have its first atomic bomb by 1990'.

May

• An Argentine memo on the meeting between Argentine Foreign Minister Caputo and his Brazilian counterpart Olavo Setúbal reports that the most relevant aspect of the nuclear agenda is the possibility of implementation of a regime of "mutual assurances" as an alternative to IAEA safeguards and the NPT.

• Argentina proposes a system of mutual inspections. Brazil replies that the issue is sensitive and that it needs to be further discussed internally.

August

• Brazilian congressmen visit the Institute of Nuclear Energy Research (São Paulo) to confirm the peaceful nature of the Brazilian nuclear program.

• Brazilian Minister of Science and Technology Renato Archer declares that Brazil does not intend to produce a nuclear bomb. He defined Argentine-Brazilian nuclear relations as "excellent".

September

• Newspaper *Correio Braziliense* reports Brazilian Army General Leônidas Gonçalves stating his support for the construction of nuclear weapons. Argentine ambassador Rafael Vázquez requests a meeting with Brazilian Foreign Minister Setubal to clarify Brazil's official position.

• Brazilian majority leader in Congress Pimenta da Veiga and President of the Senate Jorge Fragelli give declarations in favor of an atomic bomb. Brazilian Minister of Energy Aureliano Alves denies Gonçalves' claims. Rex Nazareth of the Brazilian Nuclear Commission denies that the Brazilian nuclear program has any military goals.

• Brazil´s Foreign Minister Setúbal states that the the peaceful ends of the Brazilian nuclear program have already been assured to the government of Argentina.

• Brazil creates a commission to evaluate its nuclear program. President Sarney states that he will not admit the use of nuclear energy for the production of a nuclear bomb.

• Before announcing at the U.N General Assembly that the Brazilian nuclear program has exclusivelly peaceful purposes, Sarney briefs the Argentine government beforehand.

October

• Argentina reports that a Brazilian military airplane changed its course and flew over the Pilcaniyeu enriching plant in two different

occasions.

• U.S. Senator Alan Cranston denounces that China is exporting nuclear technology without safeguard to Brazil, Argentina, Pakistan, South Africa, and Iran.

November

• Brazilian President Sarney and his Argentine counterpart Alfonsín sign the Declaration of Iguaçú and the joint declaration on nuclear policy. The government of Argentina suggests the inclusion of "bilateral safeguards" in the declaration, but Brazilian officials refuse and propose the creation of a "joint working group." The two sides set up a high-level commission to draw plans for trade liberalization and a framework for permanent bilateral consultations.

December

• U.S. ambassador Richard Kennedy visits Argentina and Brazil.

1986

April

• U.S. ambassador Richard Kennedy mentions the progress of nuclear cooperation between Argentina and Brazil at a commission in the U.S Senate.

• CNEA and CNEN identify areas of nuclear cooperation.

• A Brazilian ambassador points out to an Argentine counterpart the importance of a newspaper article, featuring the idea of mutual inspections.

May

• An Argentinean diplomat meets with ambassador Kennedy, who conveys the interest in expanding nuclear bilateral cooperation with Buenos Aires.

July

• The Brazil-Argentina Work Group on nuclear issues is created.

• An Argentine telegram reports "excellent cooperation and coordination" with Brazil in regard to disarmament.

• Brazilian President Sarney and Argentine President Alfonsín sign an agreement of cooperation and integration as well as twelve bilateral protocols. Among them, the Protocol Number 11 on "the notification of nuclear accidents" and "mutual assistance in cases of nuclear accidents and radiological emergency."

August

• Brazilian newspaper *Folha de São Paulo* publishes an article entitled 'Brazil gets ready for a nuclear test', revealing the existence of holes supposedly dug for nuclear tests in the Cachimbo mountain.

• A former Minister of the Brazilian Navy says that if it were up to him, Brazil would have built a nuclear weapon.

September

• Brazilian President Sarney issues orders that the nuclear program should be oriented exclusively for peaceful purposes.

• *Folha de São Paulo* publishes an article on the existence of holes in Argentina similar to the

ones built in the Cachimbo mountain. Head of CNEA Elías Palacios denies they are for nuclear testing.

November

• *Folha de São Paulo* publishes an article asserting that 'Argentina has already enough plutonium to produce a nuclear bomb'.

December

• The Brazilian government invites Argentine nuclear inspectors to the Institute of Nuclear Energy Research in Sao Paulo, under the administration of the Brazilian Navy.

• Argentine President Alfonsín visits Brazil and signs with Sarney a joint Declaration on Nuclear Policy and other protocols.

• The government of Brazil announces that it has mastered the production of plutonium in laboratory scale.

1987

July

• Brazilian President Sarney visits Pilcaniyeu. In exchange, Sarney invites Alfonsín to visit Brazilian nuclear facilities.

August

• The Director of Nuclebras argues that, starting in 1989, Brazil will be able to export 5 tons of enriched uranium at 0,85% to Argentina for US$ 1,4 million dollars.

September

• Sarney sends Ambassador Ricupero as his personal envoy to Alfonsín to brief the Argentine President that Brazil has mastered the technology to enrich uranium before the public announcement.

• Argentine diplomat Jorge Sábato defends the Brazilian nuclear program and states that it is "absolutely legitimate".

November

• A retired Brazilian colonel advisor of CNEN states publicly that 'if security concerns demand, it may get to the point in which the use of a nuclear artifact will be necessary.'

• Brazilian Minister of the Navy Sabioa assures that Brazil is not developing nuclear weapons, but a propulsion system for submarines.

1988

April

• Alfonsín visits the Aramar nuclear facilities in Brazil. Together with Sarney, he signs the Declaration of Iperó, upgrading the Joint Working Group to the status of permanent committee.

October

• Brazil's new democratic constitution bans the use of nuclear energy for non-peaceful ends.

November

• Sarney and Alfonsín sign a Treaty of Integration, Cooperation and Development,

and visit the Argentine reprocessing plant at Ezeiza.

1989

May

• Argentine presidential candidate Carlos Menem announces his nuclear policy. The *Bulletin of Atomic Scientists* publishes two articles warning of a possible setback in the nuclear cooperation between Argentina and Brazil.

October

• The Nuclear Control Institute sponsors a meeting in Uruguay with Argentine and Brazilian officials and pushes for further nuclear cooperation between both countries, pressing for a system of mutual safeguards.

1990

September

• Brazilian Minister of Science and Technology José Goldemberg reveals that Brazilian President Collor received a 50-page classified document by the Armed Forces with plans to develop a program of nuclear weapons.

October

• Gary Milhollin of the Wisconsin Project on Nuclear Arms Control states that mutual inspections between Argentina and Brazil would mean a considerable progress for both countries as well as for an IAEA safeguards system outside the scope of the NPT.

November

• Brazilian President Collor signs with Argentine President Menem a Joint Declaration on Common Nuclear Policy, which calls for the ratification of the Tlatelolco Treaty, the establishment of a bilateral agency to carry out mutual inspections, and an IAEA safeguards agreement between the two countries.

1991

March

• The presidents of Argentina, Brazil, Paraguay and Uruguay sign the Treaty of Asunción, which creates the Southern Common Market (MERCOSUR) to boost intra-regional trade.

July

• Brazilian President Collor and Argentine President Menem set up ABACC, the bilateral agency for mutual inspections and control.

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Rodrigo Mallea, Dr. Matias Spektor and Professor Nicholas Wheeler

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