BETWEEN SCIENCE AND ZIONISM: EINSTEIN IN BRAZIL

*Thomas F. Glick**

ABSTRACT

Because of the peculiar nature of Einstein's fame and the symbolic charges that he attracted to himself, his visit to Brazil in 1925 had the effect of both splitting the scientific community and the Jewish community. With regard to science, avant-garde mathematicians and engineers in the Brazilian Academy of Sciences were able to mobilize Einstein's prestige to dislodge the Positivists from control, a victory which helped create a favorable environment for modern physicists that would be exploited positively in the next decade. As was the case everywhere in Latin America, engineers played a prominent role in the debate over relativity. In the Jewish community Einstein's visit provoked a split between Zionists and anti-Zionists.
Key words: Brazilian science; Einstein; relativity; Physics; Engineering; Jewish community.

ENTRE A CIÊNCIA E O SIONISMO: EINSTEIN NO BRASIL

A natureza peculiar da fama de Einstein e a carga simbólica que atraiu para si mesmo fizeram com que sua visita ao Brasil, em 1925, tivesse o efeito dividir tanto a comunidade científica como a comunidade judaica. Com relação à ciência, a vanguarda de matemáticos e engenheiros da Academia Brasileira de Ciências foi capaz de mobilizar o prestígio de Einstein para deslocar os Positivistas de seu controle, uma vitória que auxiliou a criar um ambiente favorável para os físicos modernos, o qual seria positivamente explorado na década subseqüente. Como ocorreu na América Latina, os engenheiros desempenharam um papel proeminente no debate sobre a relatividade. Na comunidade judaica, a visita de Einstein provocou uma separação entre sionistas e anti-sionistas.
Palavras-chave: ciência brasileira; Einstein; relatividade; Física; Engenharia; comunidade judaica.

* Professor, Department of History, Boston University, Boston, MA 02215, USA. *E-mail*: tglick@bu.edu

1. JEWS AND SCIENTISTS

Albert Einstein was equally the most famous scientist of his day as well as the most famous Jew. Therefore his visit to Brazil in 1925 was a signal event for both communities which marked a *rite de passage* in the maturation of each. In terms of its impact on Jews and scientists alike, Einstein's visit had consequences which were significant but unintended, because Einstein the traveler was a *naif* who connected with the ambient culture only intermittently and in idiosyncratic ways that are difficult to evaluate. Both scientists and Jews constituted communities new to Brazilian society and eager for sources of legitimation in the eyes of society at large. Einstein provided a powerful symbol of identification and groups of all kinds attempted to associate him wit their causes in the course of his travels. In this paper we will consider the impact of Einstein's Brazilian trip on both groups in order to show similar effects in very different social and cultural contexts. For as I have shown elsewhere, the repercussions of Einstein's visits were similar the world over, both in countries where there were Jews, such as the United States and Argentina, and those in which there were few or none, like Spain or Japan.[1] Einstein's trip to Brazil generated an enormous harvest of comment, mainly in the press in the form of very detailed reports on his activities, together with interviews, commentary by columnists, and political cartoons and, for many years thereafter, reminiscences told by those who had interacted with the great scientist during his visit and anecdotes so widely repeated that they passed into national folklore.

2. GENESIS AND CHRONICLE OF THE TRIP[2]

Einstein, as is well known, began to take advantage of his notoriety in the wake of the 1919 eclipse results which confirmed the general theory of relativity[3]

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[1]Thomas F. Glick, "Cultural Issues in the Reception of Relativity," in Thomas F. Glick, ed., *The Comparative Reception of Relativity* (Dordrecht, D. Reidel, 1987), pp. 381-400; and *idem*, *Einstein in Spain: Relativity and the Recovery of Science* (Princeton, Princeton University Press, 1988), chapter two ("The Einstein Phenomenon," pp. 74-99). For the comparative dimension, see the following articles in the same volume: on France, Michel Biezunski, "Einstein's Reception in Paris in 1922 (pp. 169-188); on Italy, Barbara Reeves, "Einstein Politicized: The Early Reception of Relativity in Italy" (pp. 189-229); on Japan, Tsutomu Kaneko, "Einstein's Impact on Japanese Intellectuals" (pp. 351-379). On the United States, see Marshal Missner, "Why Einstein -Became Famous in America," *Social Studies of Science*, 15 (1985), 267-291.

[2]For details on Einstein's visits to Rio de Janeiro I have followed Roberto Vergara Caffarelli's compilations of newspaper accounts, "Einstein e o Brasil," *Ciência e Cultura*, 31 (1979), 1436-1455; "Os oito dias de Einstein no Rio de Janeiro," *O Estado de S. Paulo. Suplemento Cultural*, May 14, 1978, pp. 3-6; "A visita ao Rio de Janeiro," *ibid*., March 11, 1979, pp. 8-9; "As duas conferências de Einstein no Rio," *ibid*., May 20, 1979, pp. 13-15; and "Visita ao Brasil," *Folha de S. Paulo*, March 14, 1979. The details in section 2, below, are based on these articles. A less detailed account of the visit is included in Ronaldo Rogério de Freitas Mourao, *Explicando a Teoria da Relatividade* (Rio de Janeiro, Technoprint, 1987), pp. 87-116. Ildeu de

by accepting invitations to travel abroad in order to escape the tension created by the increasing climate of anti-Semitism in Berlin. This was the immediate genesis of his trips to the United States and Italy in 1921, France in 1922, Japan and Spain in 1922-23, and South America (Brazil, Argentina, Uruguay) in 1925.[4] The genesis of the South American trip was an invitation to Argentina spurred by Leopoldo Lugones, a member – along with Einstein – of the League of Nations Commission of Intellectual Cooperation.[5] It is important to note that, although Einstein lectured on relativity in the three Latin American countries, his trip had no scientific purpose, and although he addressed e Jewish communities in each, he was not on any Zionist mission.[6]

Once Einstein had been invited to Argentina, the invitation to Brazil was then engineered by the spiritual leader of the Jewish community, Rabbi Isaias Raffalovich. As Raffalovich later recalled:

> "These anxious days I heard from Buenos Aires that following the initiative of the Sociedad Cultural Hebraica, Einstein was invited to deliver a series of lectures in Argentina's capital and that he'd be there in March 1925. I thought we ought to take advantage of the opportunity and demonstrate to the people of Brazil that Jews are not only peddlers but that among them one may find world famous scientists. I contacted Professor Ignacio Amaral, president of the Polytechnic, and informed of Einstein's arrival in South America. I pointed out that it would be disparaging of the honor of Brazil should that scientist pass twice off it shores and not visit. Amaral concurred and immediately proposed to convene a special meeting of university representatives to discuss the matter. During the meeting I related Einstein's visit to Argentina and

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(continuação da nota 2) Castro Moreira and Antonio Augusto de Passos Videira, eds., Einstein e o Brasil (Rio de Janeiro, Editora UFRJ, 1995) reached me after this article was completed.

[3]Of course, the key observations were made in Sobral and the expedition itself forms an interesting chapter in the history of science in Brazil; see in this regard John Earman and Clark Glymour, "Relativity and Eclipses: The British Eclipse Expeditions of 1919 and Their Predecessors," *Historical Studies in the Physical Sciences*, 11 (1980), 49-85. From the Brazilian perspective, Caffarelli, "Einstein e o Brasil," p. 1437; and João Mendes Lira, *O eclipse total do sol visto. . . em Sobral. . . e as teorias de Einstein* (Sobral, 1979). Sir Arthur Eddington, who orchestrated the observation effort, observed the eclipse from the Gulf of Guinea; he did not go to Sobral because he had met Henrique Morize during the observation of the eclipse of 1912 and was persuaded of his ability to lead the 1919 expedition. on the eclipse of 1912 there is an excellent article by Caffarelli, "O eclipse solar de 1912, 11 *Ciência e Cultura*, 32 (1980), 561-573.

[4]On Einstein's visits, in addition to citations in note 1, above, see Michel Biezunski, "Einstein à Paris (Paris, PUV, 1991), and Eduardo Ortiz, "A Convergence of Interests: Einstein's Visit to Argentina in 1925," *Ibero-Amerikanisches Archiv*, 21 (1995), 11-70.

[5]Einstein told a Brazilian journalist that Lugones had extended the invitation to him several months before in Geneva. *Gazeta de Notícias*, March 22, 1925, quoted by Caffarelli, "A visita ao Rio de Janeiro," p. 8.

[6]Ronald W. Clark's assertion that Einstein went to South America "partly in the in the hope of coaxing money into Zionist funds from wealthy Jews" is an overstatement; *Einstein: The Life and Times* (New York, World, 1971), p. 331.

emphasized that it would not be appropriate if he did not visit Brazil as well. The delegates agreed unanimously that an effort must be made for Einstein to visit Rio on his way back from Argentina and give a few lectures. Since it was my initiative, I was asked to send Einstein a letter of invitation in the name of the university and Polytechnic. I sent it to Berlin and added that the Jewish community in Rio also participated in the invitation.[7] A few days later we received a telegram from Einstein who accepted."[8]

Einstein actually visited Brazil twice during the trip. He first passed through on the ocean liner *Cap Polonio* on March 21, 1925. Still on the boat he gave a rather long interview to a journalist from *A Noite*, mainly on scientific matters.[9] A scientific welcoming committee led by the astronomer Henrique Morize and which, included Ignácio de Amaral, Frontin, Castro, the mathematician Roberto Marinho and chemist Daniel Henninger.[10] He was taken on a tour of the city which included the Botanical Garden; there he wrote in the visitor's album: "The visit to the Botanical Garden of Rio de Janeiro in the company of the kind Dr. Pacheco Leão was one of the best experiences that I have had in my foreign travels." At this point the scientists had been joined by Rabbi Raffalovich and the Jewish community leader Isidoro Kohn.[11] At lunch at the Copacabana Palace Hotel, more Jews appeared, including the Zionist secretary Eduardo Horovitz, the president of the Hebrew College Leon Schwartz, and Emanuel Galano, president of the Beni Herzel.[12] Einstein's table-talk, ranging from scientific topics to ballroom dancing, was recorded at length by Assis Chateaubriand, editor of *O Jornal*.[13] Like many journalists, Chateaubriand noted that Einstein more resembled an artist than a

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[7]The letter, in English and dated January 27, 1925, is preserved in the Albert Einstein Papers at Hebrew University. I have consulted a copy in the Boston University Duplicate Archive. Interestingly, Raffalovich does not mention Amaral in this letter but reports to Einstein that he is extending the invitation on behalf of Aloysio de Castro, director of the Faculty of Medicine, and Paulo de Frontin, director of the Polytechnic and president of the Engineering Club. He goes on to say: "The Jewish Community, of which I have the honour to be the spiritual head, anticipate with pride and pleasure the honour which your presence will reflect upon them."

[8]Isaias Raffalovich, *Tziunim we-Tamrurim* (Tel Aviv, 1951), pp. 300-301.

[9]*A Noite* (Rio de Janeiro), March 21, 1925. Einstein's policy was to refuse all requests for interviews; but there were quite a few impromptu interviews with reporters who ignored his policy or were unaware of it.

[10]Henninger (1851-1928) was a German-born chemist who had studied with Charles Wurtz in Paris and was professor of industrial chemistry at the Polytechnic.

[11]Isidoro Elyseo Kohn (1877-1965), businessman, born in Austria; see Egon and Freida Wolff, *Diccionario biográfico II. Judeus no Brasil—Século XIX* (Rio de Janeiro, 1987), p. 212.

[12]Eduardo Horowitz, born in Lithuania was the brother in law of Zionist president Jacobo Schneider and one of the *estruturadores* of the Rio Jewish community according to Samuel Malamud, *De arquivo e da memória: Fatos, personagens e reflexões sobre o sionismo brasileiro e mundial* (Rio de Janeiro, Bloch, 1983), p. 25 n. 3.

[13]*O Jornal*, March 22, 1925. reproduced by Caffarelli, "A visita ao Rio de Janeiro," p. 9.

scientist. The first visit stimulated popularizations of relativity in the daily press, including articles by Marinho, Teodoro Ramos and Lélio Gama. At lunch, after Aloysio de Castro showed him a copy of *O Jornal* with a photograph of the solar eclipse of 1919, Einstein wrote "The problem conceived by my head the luminous sky of Brazil had to solve" on a piece of paper and passed it to Chateaubriand on the way back to the ship, which sailed at three O'clock, Chateaubriand accompanied him on a tour to the center of the city where the physicist insisted on getting out the automobile, walking up Rua do Ouvidor to Gonçalves Dias, then down Sete de Setembro before regaining his automobile on Rio Branco avenue. "He did not cease praising Gonçalves Dias and Ouvidor, which he said were filled with shadows more peculiar to the tropical climate than those of the large avenues," Chateaubriand recorded on the second visit, he arrived on May 4 at eight in the evening on the French vessel *Valdivia*. On May 5 he received an honorary degree and then ascended the Pão de Açúcar. On May 6, Kohn accompanied him to meet the president Artur Bernardes and visit with a number of ministers, paid a visit to the mayor of Rio, and then proceeded to the Engineering Club where he gave the first lecture on relativity. on the 7th he visited the National Museum of Natural Sciences in the Quinta de Boa Vista, lingering at the displays of native culture. There followed a luncheon in Einstein's honor at the home of Aloysio de Castro and, later, his reception in the Brazilian Academy of Sciences. In responding to many words of praise Einstein said that instead of a speech he would survey briefly recent German research on the nature of light, comparing the undulatory and quantum theories. On May 8 he visited the Oswaldo Cruz Institute with Carlos Chagas in the morning and lectured at the Polytechnic in the afternoon and was received by the German colony at the German Club in the evening. On May 9, Morize received him at the National Observatory where Einstein observed the reception of a transmission signal emitted by a pendulum which recorded the standard time, and inspected various astronomical instruments. In the evening he was received by the Jewish colony at the Automobile Club, where he sat at the head table along with Raffalovich, Kohn and Professor David Peres.[14] Words of welcome, rich in symbolic language, were offered by Rabbi Raffalovich. Then Horovitz greeted Einstein in Yiddish, Kohn offered remarks in German, and Peres in Portuguese. Einstein made a general reply in German, stressing the "rootedness of his religious conviction and stressing how much they had contributed to guide him on the path of the studies to which he had dedicated himself."[15] On Sunday May 10 there was an excursion by car to Tijuca and Mt.

[14]David José Peres (b. 1883 in Belém) had studied at the Alliance Israelite in Tangiers and was professor of Spanish at the Colégio Pedro II. In the 1920s he was president of Confederação do Professorado Brasileiro, a Zionist and an activist in Sephardic affairs. See Malamud, *De arquivo e da memória*, p. 37 n.; and Antônio Nunes Malveira, *Achegas para uma biografia do professor David José Pérez* (Rio de Janeiro, Biblioteca do Professor do Colégio Pedro II, 1983).

[15]*A Noite*, May 11, 1925: "o arraigamento de suas convicções religiosas."

Papagaio which Einstein was given some mineral and other specimens. On May 11, Juliano Moreira received the visitor at the national psychiatric hospital, which he toured with Kohn. In the neuropsychiatric service of Henrique Roxo Einstein said he wanted to view a case of paranoia. "Several patients were presented to him and he asked a number of questions.' Kohn and Einstein then proceeded to Moreira's house for lunch. In the evening he visited the headquarters of the Brazilian Press Association and then appeared at a dinner offered by members of the German colony at the Hotel Gloria. Einstein sailed for Europe on May 12. Soon after his arrival in Berlin, he wrote to Robert Millikan, "The journey made my nerves so bad that the doctor very urgently advises me not to let myself in for so great an undertaking for several years."[16]

Reserving for later my observations on various aspects of his stay in Brazil I will here stipulate that the activities were typical of Einstein's foreign travels which came to resemble a music-hall act (as described by a Spanish journalist): "He arrives at a place ... opens the package of three lectures and once again begins to speak to his presumed clients."[17] In Latin countries where physicists were scarce, Einstein was typically received by physicians and engineers. To gain some respite from the endless round of receptions and visits he would take refuge in the Jewish community, in those places where there was one.

3. EINSTEIN'S VIEW OF THE BRAZILIAN TRIP

When Einstein was asked his impressions of sites just seen he would typically respond with a pithy and quotable conclusion; he had the ability to tell any interlocutor what he wanted to hear and to do so in way that revealed very little about Einstein's inner thoughts or feelings. This was one of a number of mechanisms by which Einstein established personal distance between himself and the public. It is, therefore instructive to compare the Einstein's public declarations of his impressions of Brazil and the glowing responses reported by journalists to his private thoughts, recorded in his travel log. The entries in his diary are almost always telegraphic, but frank and to the point. Because of his telegraphic style, one can presume that. Einstein recorded only his most vivid impressions. I will gloss each entry in turn.

> "March 22. Yesterday in Rio, Rabbis and some other persons as well as a few engineers and medical people were waiting for me when we docked. Preceded

[16]Einstein to Millikan, June 13, 1925, quoted by Clark, *Einstein*, p. 331.

[17]Tomas Gomez de Nicolds, "La relatividad de los valores, Alegrémonos de no ser sabios," *El imparcial* (Madrid), March 10, 1923; see Glick, *Einstein in Spain*, p. 253.

> by our entry into the harbor 5:30-7:00. overcast with light rain which in no way diminished the majestic impression of the peculiar gigantic cliffs. My escort was-warm and pleasant. The Botanical Garden and the flora in general surpass the dreams found in *The Thousand and one Nights*. Everything lives and grows, so to speak, before one's very eyes. The racial mixture one sees on the streets is delightful. Portuguese-Indian-Negroid with all kinds of admixtures. Plant-like, instinctive, muted by the heat. Marvelous experience. An indescribable wealth of impressions in just a few short hours."[18]

Einstein's experience in Brazil was unique among his foreign travels in that he waxed poetic about the natural landscape – a "paradise of natural beauty", as he characterized the country to Lord Haldane.[19] In other places, art, architecture and performances of one kind or another (rarely people) captured his fancy. Here Einstein's diary confirms the newspaper reports. Thus Chateaubriand has Einstein reporting the March 22 visit to Rio, including the Botanical Garden, as "one of the greatest emotional experiences of my life" and goes on to mention the uniqueness of the tropical plants that Leão had shown him. The botanist Leonam de Azeredo, who was present during the visit, recalled that "What most impressed Einstein during his visit ... were the tendrils of the climbing Passionflower (*maracujá*), whose circumvolutions reverse direction at a certain point in their spiral. The sage allowed that there must be a scientific explanation, perhaps a mathematical one, for the phenomenon."[20]

> "May 4. Arrival in Rio at sunset – magnificent weather. Granite rock islands with fantastic shapes offshore. Humidity creates a mysterious effect .... met by hotel personnel at the port and found professors and Jews awaiting me at the dock. The all exude a tropically softened impression. The European needs greater metabolic stimulus than this eternally humid warm climate offers. In that respect, natural beauty and wealth are of little use. I think that the life of a European who is a slave to his Job is still richer and above all less dreamlike and hazy. Perhaps adaptation is possible but only at the price of surrender of activity."

Einstein's image of tropicality is of course a cliché, but in Rio the tremendous impression that the landscape made upon him, occasioning a kind of surrealistic impression gives the cliché an added emotional charge. The notion that the climate of the New World has a debilitating effect on Europeans is reminiscent of the

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[18]Travel Diary. Trip to Uruguay, Argentina and Brazil. Einstein Papers Duplicate Archive, Boston University.

[19]*Naturschõnheit*. Einstein to Haldane, May 5, 1925, Einstein Papers Duplicate Archive. In a post card to Paul Ehrenfest sent the same day he repeats: "Here is a true paradise and also a happy mixture of folks."

[20]Reminiscence of Azeredo, recorded by Caffarelli, "A visita ao Rio de Janeiro," p. 9.

"Debate of the New World" of the eighteenth century when similar points were made by Buffon and other European naturalists.[21] Einstein's ideas on the tropics were no doubt received indirectly through the literary diffusion of images developed in European tropical medicine.

In his diary, Einstein makes some curious and arresting comments on the Brazilian climate and its effect on society. The constant heat and humidity do not stimulate metabolic processes the way they do in Europe, accounting for a kind of lethargy – perhaps nonchalance expresses it better – among Brazilians. Therefore he concludes it is better to be a slave to one's work in Europe than to be more relaxed and living in Brazil. He freely admits that no one subscribed to his climatic theory except himself! These notions are very old, however, and perhaps relate to the popularization, over many generations of European intellectuals, of the notion promoted by Buffon in France, De Pauw in Germany, that inferiority of the New World's climate with respect to Europe accounted for the retrogression of European biota – including human beings – when transported to the New World.

In a speech delivered to the Hebrew Association in Buenos Aires later on, Einstein extended the general view to human beings:

> "Russian Jews, they who lived most in accord with tradition, are the ones who are most distinguished in every branch of modern culture. Yet the Russian Jews who have emigrated to the Untied States and who have submitted themselves to American education, display inferior spiritual aptitude, according to what I am told by a friend of mine, director of a hospital in Berlin.[22]

> May 5. Walk downtown with Kohn. Busybody type. At noontime with his wife and her lady companion in the hotel. The women are nice and amusing. In the afternoon visit and invitation of some German merchants. After that, to Sugarloaf with professors. Dizzy trip by wire cable over a wild forest. At the top a magnificent interplay of fog and sun. In the evening, welcomed by various Jewish organizations. Then a nocturnal car trip with the very likeable, intelligent and fine Rabbi Raffalovitch."

Here again Eintein's effusive public statements about the landscape are confirmed by his diary entry. The press account of Pão de Açúcar records that Einstein "had occasion to witness of grandiose spectacle, which he confessed he had never seen. Descending to the Morro da Urca he was served a tea and sweets in a restaurant where, when night fell, he was able to appreciate the exceptional beauty of the illuminated city."[23]

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[21]Antonello Gerbi, *The Dispute of the New World: The History of a Polemic, 1750-1900* (Pittsburgh, University of Pittsburgh Press, 1973).

[22]"La conferencia de Einstein," *Mundo Israelita* (Buenos Aires), April 25, 1925, p. 2.

[23]*Jornal do Brasil*, May 6, 1925, cited by Caffarelli, "Os oito dias," p. 3.

> "May 6. Walk to the upper section of the city with Silva Mello. Smart, fine person who indoctrinated me into the small intrigues of the department. Here language is more effective than observation. Noontime – stopped at a better type of harbor pub. Pungent fish dish. In the afternoon visited the president, minister of education, mayor. At 4:30 first lecture in the Engineer's Club in an overcrowded room with street noises coming through the open windows. If for no other reason than pure acoustics, it was impossible to be understood. Little understanding of science. For the others, I am a kind of white elephant, and for me they are fools. In the evening alone in my hotel room – naked, I enjoy the view of the bay with its countless green and partially naked rocky islands in the moonlight."

A. da Silva Mello, whom Einstein obviously admired, was a physician and medical educator who had studied in Germany. Einstein told Chateaubriand on March 21: "[Dr.] Hermann, who was one of my best friends, recommended me to [Silva], who had been his assistant in Berlin. I saw him on board briefly, but I expect to see him when I return." The press reports confirm the difficulty those not seated near Einstein had in hearing his lecture. Some cupped their hands over their ears. "The audience crowded in on the philosopher, whose voice grew dimmer as the listeners, in a semicircle, drew nearer."[24]

> "May 7. Visit to the Museum of Natural History. Animals and anthropology main feature. 'The structural beauty of the spinal column of a snake. Indian culture, diminutive mummies, poisoned arrows. Magnificent garden in front of the museum. Statistics of miscegenation. As a result of miscegenation, blacks are gradually disappearing due to the difference resistance of the mulattoes. Indians are relatively few in number. Noon visit to Professor Castro. A proper ass, but interesting company: Russian archeologist, intelligent journalist, authoress, pretty, smart and somewhat arrogant. Afternoon at the Academy of Sciences. Those fellows are powerful speakers. When they praise a person, they also praise eloquence. I think that such craziness and irrelevance has something to do with the climate. However, I'm the only one here who believes that."

The newspaper accounts of the visit to the Museum are scant. According to one account, Einstein was interested in curare, the poison used by Amazonian Ticuna Indians, saw a straw ring used by certain Indians and noted that it was a custom akin to circumcision, and regretted not having enough time to listen to recorded Indian songs.[25] We know from an anecdote that he was accompanied by the director Roquette Pinto. Pinto offered Einstein an Indian bracelet, adorned with the scales

[24] *O Imparcial*, May 7, 1925.

[25] *O Paiz*, May 12, 1925.

of an armadillo shell, for his wife. When Einstein requested another, Pinto inquired if it was for his daughter. "No," Einstein replied, "It is for my f irst wife. We are very good friends."[26] Einstein's affectionate reference to Mileva Maric, his first wife, is somewhat surprising inasmuch as their relationship during this period was thought to have been cool at best.[27] Silva Mello was at the lunch at Castrols house, along with Morize and Henninger. The authoress was the poet Rosalina Coelho Lisboa; the journalist, Assis Chateaubriand; I cannot identify the Russian archeologist. The bombastic speeches at the Academy of Sciences were delivered by Moreira, Francisco Lafayette de Carvalho, and Mario Ramos.

> "May 8. Morning visit to the Institute of Biology. Pathological Anatomy. Disease transmitting insects. Trypanosoma viewed through the microscope. Afternoon lecture in the School of Engineering. Stifling heat in an overcrowded hall. Evening invitation to the German Club 'Germania'. Pleasant dinner."

The record of the visit to the Oswaldo Cruz Institute is regrettably telegraphic but adds to the newspaper accounts the fact that Chagas evidently showed him the trypanosome that causes Chagas' Disease. Chagas' son Evandro, a fluent German speaker, acted as interpreter.

> "May 9. Observatory with interesting apparatus for (measuring) earthquakes. Noon visit to Silva Mello. Very pleasant with Brazilian food. I found it very comfortable in this house went on foot to visit two brothers, physiologists doing interesting work on respiration. Dinner at Kohn's. Ordinary but good-natured people. Large reception of Jews at 9 PM in the Jockey Club. Long speeches with my enthusiasm and immoderate amounts of unctuous flattery, but all in all honestly meant. Thank God, that's over. Two more days to get through which promise to be pleasant. But an irresistible longing to finally get some peace and quiet away from all these many people I don't know."

Einstein was shown around the observatory by the director, Morize. The seismograph that attracted Einstein's attention was a Milne Shaw apparatus. He reported never having seen one before.[28] The visit to the physiologists is not mentioned in the press, but refers to the brothers Alvaro and Miguel Osório de Almeida.[29] The reception by the Jews was at the Automobile Club, not the Jockey

[26]Arnaldo S. Thiago, "Ciência e cientistas do Brasil (Conferência de Roquette Pinto, no Itamarati, em julho de 1939)," *Anuário Catarinense*, 8 (1955), 46-47, on p. 47.

[27]*See* Clark, *Einstein*, p. 221.

[28]There is a detailed and interesting account of Einstein's tour of the Observatory in *Jornal do Brasil*, May 10, 1925. A photograph of Einstein with the observatory staff is reproduced In Henrique Morize, *Observatório Astronômico: Um século de História (1827-1927)* (Rio de Janeiro, Museu de Astronomia, 1987), p. 33.

[29]Thales Martins, "A biologia no Brasil," in Fernando de Azevedo, ed., *As ciências no Brasil*, 2 vols. (São Paulo, Melhoramentos, 1955), II, 201-259, on pp. 238-241.

Club (the site of a lunch for Einstein in Buenos Aires on April 2). The unctuous flattery no doubt refers to Raffalovich's talk, discussed below.

> "May 10. Magnificent day trip by car with the Kohn family and Commission to various vantage points. Sunset trip by cogwheel railway up Corcovado. Evening reception of the Zionist Headquarters in a quiet room – unbelievably hot. Ventilation no longer perceptible. Speeches shorter than normal."

The Zionist meeting was one at the Centro Sionista, with speeches by Jacobo Schneider, Mosiés Koslovski, the Center's president, and Rabbi Raffalovich. There is a photograph of the meeting which indeed shows a large crowd in a small room.[30] Jacobo Schneider's view of Einstein as that he lacked social graces. Schneider's son recounted, when I asked him what his father had told him about the visit, that Einstein only dressed well when Elsa was present. Einstein's disheveled appearance on the trip entered local mythology. In his report to the foreign office, the German ambassador noted Einstein's "obvious indifference to matters of grooming was not held against him." Apparently he never unpacked his suitcase![31]

> "May 11. Visit to an insane asylum, whose director, a mulatto, is a first-rate person. Invited me to Brazilian lunch with a lot of pepper and German women. Then a visit to the ministers who, thank God, were for the most part absent. Then photo session. Film showing of Indian life and their exemplary humanitarian treatment by General Rondon, a humanitarian and first-class leader. Finally, dinner in the hotel, hosted by the German ambassador. Then a lot of correspondence and signatures. Free at least, but more dead than alive."

The mulatto psychiatrist was, of course, Moreira, an extraordinary figure who was the first Brazilian, and no doubt the first Latin American, to speak publicly of Freud (from his chair of psychiatry in Bahia in 1899). The film on Cândido Mariano da Silva Rondon made so great an impression on Einstein that later on in the same month he nominated Rondon for the Nobel Peace Prize. "During my visit to Brazil," he wrote, "I have gained the impression that this man is highly worthy of receiving the Nobel Peace Prize. His work consists of adjusting Indian tribes to the civilized world without the use of weapons or coercion."[32]

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[30]Nachman Falbel, "A visita de Albert Einstein à Comunidade Judaica do Rio de Janeiro," in *Estudos sobre a comunidade judaica no Brasil* (São Paulo, Federação Israelita, 1984), pp. 134-139, on p. 138. Photograph on p. 136.

[31]Interview with Eleazar Schneider, son of Jacobo, Rio de Janeiro, March 10, 1990; German ambassador Knipping's report in Christa Kirsten and Hans-Jurgen Treder, eds., *Albert Einstein in Berlin 1913-1933*, 2 vols. (Berlin, Akademie-Verlag, 1979), I, 234-235; (suitcase) John Plesch, *Janos, The Story of a Doctor* (London, Victor Gollancz, 1947), p. 206.

[32]Cited by Abraham Pais, *Subtle is the Lord ... The Science and Life of Albert Einstein* (New York, Oxford University Press, 1982), p. 514 (May 22, 1925).

4. EINSTEIN IN THE PRESS

As I have indicated, press coverage of Einstein's trips, no matter what the country, tended to be hackneyed, with the same points being made over and over again, in similar terms and with similar language.[33] I have noted elsewhere the popularly held notion that Einstein's ideas were incomprehensible was linked to his persona, which was perceived as not conforming to the common concept of what a scientist is supposed to be like. The fact that relativity was expressed in everyday terms like "time" and "space" only added to the public's confusion.[34]

Chateaubriand's description of Einstein is a particularly good one, but fully consonant with all the others of the genre:

> "When seated at the table with him, I noted the two strongest aspects of his persona: a high forehead, excessively high, intelligent and enlightened, and marble-white hands, hands of the most intimate and suave spirituality. As everyone knows, Einstein plays the violin; he has a peregrine artistic sensibility. For the rest, it is enough to talk with him a few minutes to see him for the artist, from, the tips of his toes to the roots of his hair. I have met few men of science who, in spite of the Christian poverty of their clothing, and shoes almost like *alparcatas* [hemp sandals], have so much spiritual grace, spontaneity and engaging magic .... From time to time, commenting on this or that event, he smiles, and his smile is an enormous one, Rabelesian, full of kindness and sweetness."

Chateaubriand here provides a description of Einstein's contradictory personality which is all his readers needed to explain the incomprehensibility of Einstein's ideas. Note that the journalist here alludes neither to Eintein's Germaness nor to his Jewishness. Except for the far right, the gentile press in the countries he visited in the 1920s rarely alluded to his culture, except to praise German science, and virtually never to his religion. In Brazil, Gilberto Freyre was one of the few to mention Einstein's Jewishness, and only to underscore Einstein's universality (science lacks a country, as do Jews).[35]

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[33]The press description of each trip was conditioned by previous trips. Thus what was said about Einstein in Spain in 1923 was conditioned by the reports of his trip to Paris in 1922. Brazilian journalists were aware of these precedents. Similarly, a full summary of Chateaubriand's long column in *O Jornal* on March 22, 1925, appeared in *La Nación* (Buenos Aires) on March 23. See Glick, "Cultural Issues in the Reception of Relativity," pp. 389-390.

[34]Glick, "Cultural Factors in the Reception of Relativity," pp. 386-387.

[35]Gilberto Freyre, "Einstein, regionalista," in *Tempo de aprendiz*, 2 vols. (São Paulo, IBRASA, 1979), II, 140-142, on p. 140. This article, originally published in the *Diário de Pernambuco,* May 4, 1925, was a gloss on Einstein's remark to Chateaubriand that although he favored the economic and political union of Europe, he also hoped, that each country would retain its distinctive regional culture. The invitation extended to Einstein by the Association of Journalists, referred to him as "the great Jewish man of science from Germany" (Falbel, "A Visita de Albert Einstein," p. 135). Einstein's Jewishness was more newsworthy in Buenos Aires, with its large Jewish community.

As for incomprehensibility of relativity, the press reported bystanders loitering outside of the Engineering club where Einstein was lecturing: "Einstein is talking there, upstairs." "It's true. I'm going up ... admission is free." "Not me; I don't understand anything ... in mathematics I never got past the division tables."[36] At the Academy of Sciences, a swarthy fat man was observed to say to his neighbor as Einstein spoke: "novels, fantastic ideas ... not practical, not real, this is nothing," no doubt reflecting a view entertained by some, but by no means not all, engineers that abstract ideas like relativity had no practical application. The faces of Admiral Gago Coutinho and Licínio Cardoso, the positivist leader, both anti-relativists, were scrutinized for sarcasm and irony.

> "Only Professor Sodré da Gama seem to be enthusiastic. With each tracing of chalk which Einstein's steady hand-made on the blackboard, in the schematic demonstration of his ideas, the young mathematics professor of the Polytechnic School nods his head in full approval. He sublimated, in deference to the pervading [hostile] mood, the discrete smile of victory that the speaker sketched out in demonstrating the falsity of certain current and accepted notions. But for many, Einstein was a deception. His doctrine which, according to the general idea, could only be expounded and understood by means of the inextricable forest of abstract mathematical symbols, was expounded without equations, without integrals, without complicated calculations. With the logical power of words and with the graphic resource of some drawings, he made the principle conclusions of his theory comprehensible."[37]

Here the reporter appears to conclude that incomprehensibility was related to the preconceptions of the listener. Licínio Cardoso, who rejected relativity on doctrinaire positivist grounds, was described as "having the air of one who ... mentally counterposed the dogmas of Auguste Comte to the principles of Einsteinian mechanics. He also seemed to be irreducible."

5. EINSTEIN AND THE SCIENTIFIC COMMUNITY

The glowering visages of Gago Coutinho and Licínio Cardoso that reporters noted at Einstein's lectures presaged a fierce debate in the Academy of Sciences that broke out soon after Einstein's departure, at two stormy sessions held on June 10 and July 8. The debate was significant because the outcome determined the immediate fate of physics and mathematics in the country. Modern physics came to Brazil only with the founding of the University of São Paulo in the 1930s. Before

[36] *O Imparcial*, May 7, 1925.

[37] *O Paiz*, May 9, 1925.

that time systematic instruction in the field was confined to the Polytechnic School (founded in 1893) where fundamentals of applied physics were imparted to engineering students. At the time of Einstein's visit, only astronomers, mathematicians and some engineers were able to comment on his theory. of the astronomers, Henrique Morize of course was a figure of world reknown who had planned the British eclipse expedition to Sobral in 1919. Both he and Lélio Gama, another member of the Sobral expedition, defended relativity openly in newspaper articles.

Even in the provinces, Einstein was a beacon of modern science. In Recife during the 1920s, Luiz de Barro Freire explained Einstein's theory and defended it against a well-known traditionalist attack by Henri Bouasse. Freire, engineer, mathematician and physicist, was largely self-taught in contemporary science. He imparted his enthusiasm to a gifted generation of students, including physicists Mario Schenberg and José Leite Lopes and mathematician Leopoldo Nachbin.[38]

It was not unusual, given the dependence of general relativity on absolute differential calculus, for mathematicians to have predominated in its reception. They dominated the scientific reception of relativity both in Italy and in Spain, for example. But in Brazil, Einstein's visit drew attention to a deep division in the ranks of Brazilian mathematicians between Comtean positivists led by Licínio Cardoso and a younger generation (whose most representative figure was Manoel Amoroso Costa) which had mastered the new mathematical physics of Poincaré, Levi-Civita and a host of Italian mathematicians. Costa was one of the first Brazilians to interpret the eclipse results in the newspapers and he must have been acquainted with Einstein's theories before then.[39] The only original work in relativity produced by a Brazilian scientist during this period was a study by Teodoro Ramos, also a mathematician, on the spectral rays of hydrogen.[40]

The Comteans, however, clung dogmatically to out-of-date ideas that Comte had promoted which impeded the reception of both non-Euclidean geometry and Maxwell's field theory, both denounced as metaphysical abstractions. Cardoso, whose hostility to Einstein was registered in the press at the May 6 lecture, waited until the distinguished guest had left the country and then attacked him in the press with an article entitled "Imaginary Relativity" (published in *O Jornal* on May 16).

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[38]Ivone Freire de Mota e Albuquerque and Amélia Império Hamburger, "Retratos de Luiz de Barros Freire como pioneiro da ciência no Brasil," *Ciência e Cultura*, 40 (1988), 875-881.

[39]Manoel Amoroso Costa, "A teoria de Einstein," O Jornal (Rio de Janeiro), November 12, 1919, reprinted in Costa, *As idéias fundamentais da matemática e outros ensaios*, 3rd ed. (São Paulo, Convívio, 1981), pp. 101-102. This volume contains several other popularizing articles on relativity written in 1922, including a lecture at the Escola Politécnica, "A teoria da relatividade. Esboço histórico" (pp. 115-119). Costa also wrote a book on the subject, *Introdução à teoria da relatividade* (Rio de Janeiro, Sussekind de Mendonça, 1922).

[40]Teodoro Ramos, "A teoria da relatividade e as raias espectrais do hidrogênio," *Anais da Academia Brasileira de Ciências*, 1 (1929), 20-27.

This brought about the attacks on Cardoso in the Academy of Sciences where he was in turn attacked, and Einstein defended, by Adalberto Menezes and Alvaro Alberto, on June 10, and by Amaral and Marinho on July 8.[41] Thus did Einstein's trip embolden the new guard of Brazilian mathematicians to attack and discredit Cardoso and his allies.[42] This debate, which marked the end of positivism as a force in Brazilian science, demonstrates how popular and learned opinion can be molded and galvanized by a prestigious leader in order to effect a paradigmatic change of ideas within a scientific community. Characteristic of science in underdeveloped countries the prestige, in the person of Einstein, necessarily came from without. By beating the positivists, Brazilian relativists then acquired the prestige that fighting Einstein's battle brought them, after Einstein (in his Academy lecture) had fought theirs.

6. EINSTEIN AND THE JEWISH COMMUNITY

Einstein's visit exposed a similar power struggle in the Jewish community. The history of this split is not altogether clear and might never have come to light had Einstein's presence not forced the combatants to state their positions openly. Among scientists and engineers Einstein symbolized modernity. Among Jews Einstein's symbolism was multivalent. He symbolized Zionism, but other things as well. We shall try to read those symbols from public statements made during his visit.

Speeches of welcome made by Raffalovich and Peres on May 9 were both ripe with symbolic language. The rabbi first begged Einstein's permission to use the intimate form *tu* when addressing him, as our forefathers addressed the Creator, because it was said that "a portion of divinity shines through in you." Einstein honors the great and generous Brazilian land which does not know the true Israel, "this Israel which you incarnate at this moment". Just as we listen to the sacred text of the Decalogue, Einstein has given us the Great Law. Our racial pride is exalted by the knowledge that if a cataclysm should wipe out all Jews, the glory of Israel will shine for all eternity If only the name of Einstein survives. Peres too struck the note of ethnic pride: "Ever since I noted his name and the revolutionary

[41]Marinho was the leading relativist among Brazilian engineers; see his "high-brow" popularizations, "O princípio de relatividade," *Revista de Ciências*, 4 (1920), 12-24, 45-53; and "A teoria de relatividade de Einstein," *Revista Brasileira de Engenharia*, 1 (1921). Marinho summed up his position in the debate with the Positivists in "Resposta às objeções leventadas entre nós contra a Teoria da Relatividade," *Revista da Academia Brasileira de Ciências*, 1 (1926), 13-17.

[42]On the academic debate over Einstein, see Simon Schwartzman, *Formação da comunidade científica no Brasil* (São Paulo, FINEP, 1979), p. 112; Antonio Paim, "O neopositivismo no Brasil. Período de formação da corrente," in Amoroso Costa, *As idéias fundamentais da matemática*, p. 58. See also Paim, "Indicadores do término do ciclo positivista," *Revista Brasileira de Filosofia*, 30 (1980), 335-349.

movement which he spread in-the world of science, an old racial pride awakened in me, which as you know is also a mixture of bitterness, disappointments and hopes. And I understood that, more than once, the mysterious commandment of the prophets – Let the light go forth from Israel – was fulfilled." Jewishness was the element of Einstein's personality which, besides his worth as a scholar and his immense goodness, links him to us and our destiny.[43]

The two clearest symbolic elements here are first, that he incarnates the Jewish people and represents their aspirations to non-Jews; that he has obviously been so successful at it, he stands as symbol for all Jews and thereby awakens their "racial pride". The second theme is that Einstein is divine, a lawgiver. Indeed this is one of the cornerstones of the "Einstein phenomenon", one which accounted for his great popularity . When Einstein visited Spain, he asked José Ortega y Gasset how mass interest in abstract ideas could be accounted for. Ortega replied that this was understandable as a reaction to the loss of bearings that Europeans suffered after the Great War:

> "The faith of men was empty, therefore. In such a circumstance there appeared your work, in which laws are promulgated for he stars, which obey them. The human masses have always perceived astronomical phenomena as religious. In them, science is conjoined with mythology and the scientific genius who masters them acquires a magical halo. You, Sr. Einstein, are the new magus, the confidant of the stars."[44]

The representation of Einstein as a magus, one who had understood laws of nature that had eluded everyone else, was a theme common to Jewish and non-Jewish commentators alike. Other elements of his persona, such as his artistic demeanor, were seemingly of more interest to the public at large than to the Jewish community. Ethnic pride, logically, was a distinctive and logical Jewish reaction to Einstein. This was based in part on public knowledge that Einstein had deliberately adopted a Jewish persona after becoming famous. It was a topic of conversation between Raffalovich and Einstein on the excursion of May 5:

> "In a tour that the Academy [of Sciences] arranged in the woods outside Rio, we discussed an interesting phenomenon that many distinguished Jews returned to their people thanks to outside pressure. Thus, for ex ' ample, Moses Hess returned after the Damascus blood libel and Herzel wrote his *Nation of Jews* following the Dreyfus affair. To this Einstein replied: 'Me

[43] *O Paiz*, May 15, 1925.

[44] Glick, *Einstein in Spain*, p. 301.

too,' and explained that until 1934 [*sic*][45] he paid little attention to Jews and Judaism simply because his scientific work filled his entire being. But when he arrived at Berlin and heard from all directions 'Jew, Jews' he decided that 'if I am a Jew, I will be a good one.' Following a brief silence he added: 'One must remember that an outside pressure could work only if a Jewish flame still remained in the heart.' "[46]

When news of Einstein's impending trip became public, the leaders of the Jewish community gathered at the home of a Sephardic businessman, Isidoro Cohen, to make plans for the event. Cohen announced that Einstein's trip had been completely planned for and that he would represent the Sephardic community and Jacobo Schneider, the Zionist leader, the Ashkenazi. This announced led to a heated argument when Nathan Becker complained that Schneider hardly represented his own organization, much less the entire community. Later on, a niore violent debate erupted when Berel Helman and Aron Schenken, the representatives of the Scholem Aleichem Library (a repository of Yiddish books) denounced the entire operation as undemocratic and that the reception community should be elected by the entire community. The leadership responded angrily, declaring that the "Scholem Aleichem Library was not an institution, that its books were bought with crooked money, and that the name of Scholem Aleichem was without importance," a diatribe that provoked the withdrawal of the Library delegation, in spite of attempts by Horowitz and Schwartz to pacify them. This was, in fact, the beginning of a split in the Rio Jewish community into two groups which would later be labeled "progressive" and Zionist", respectively. The same night, the Progressives sponsored a program at the Library to commemorate the tenth anniversary of the death of the Yiddish writer I. L. Peretz, during which Helman and Schenken reported to the audience on the day's events. Accordingly, a protest was drafted and signed by fifty-two of the eighty-five persons present. (In 1929, the Zionists were decisively defeated in elections for the Library's officers.)[47]

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[45]The year intended is 1914; Einstein stated that when he moved to Berlin in that year he first became aware of his own Jewishness; Clark, *Einstein*, p. 374.

[46]Raffalovich, *Tzionim we-Tamrurim*, pp. 202-203.

[47]Nachman Falbel, *Jacob Nachbin* (São Paulo, Nobel, 1985), pp. 89-91. Falbel's account is based on Aron Schenken's memoirs, *Vort un Tat* (Rio de Janeiro, Ykuf, 1959). Raffalovich's account (*Tzionim we- Tamrurim*, pp. 202-202) is less detailed: "Even before Einstein arrived, I invited representatives of all walks of life in the Jewish community to nominate a welcoming committee. Representatives of the leftist Scholem Aleichem Library remonstrated against my inviting Einstein before, obtaining prior approval from the Jewish public explained to them that only through the university's invitation could he come to Rio and I only desired that the Jews would participate in the invitation in an official manner. All my explanations were in vain, and the protesters refused to join the welcoming committee, even though they demanded later that Einstein visit their library, and the peace-loving genius consented."

Einstein, In his address at the Automobile Club, had struck an explicitly Zionist note, asserting the need for Jewish solidarity in helping needy brethren, especially those involved in the reconstruction of Eretz Israel.[48]

7. CONCLUSIONS

We have seen that Einstein's visit held powerful symbolic and real political significance for two groups. For all Brazilian Jews, Einstein brought a powerful stamp of approval in their quest for recognition a a worthy component of Brazilian society. For the Zionists, Einstein's public support of their cause solidified their position as the elite of the Jewish community. But so universal was the physicist's appeal that the "Progressives" too sought his approval and in a visit that Einstein made to the Library after the meeting of the Zionist Center on May 10, they presented him a lavishly decorated edition of the works of Scholem Aleichem. For the Zionist leaders who accompanied Einstein, the visit to the Library was an occasion to show off their guest's approval to their political enemies. In spite of his Zionism, Einstein's presence also lent legitimacy to the Progressives' cultural program, inasmuch as Einstein's support for minority languages and cultures in the 1920s were well-known and had been the basis on which the Catalan nationalists had lionized him during his visit to Barcelona in 1923.

For the scientists, the meaning of Einstein's presence was much less ambivalent. He was a universal symbol for modern science and the young mathematicians had a field day in making relativity the weapon with which to deal a death blow to the sclerotic forces of positivism. The victory in the Academy of Science and in public opinion was had by pressing the advantage that wrapping themselves in Einstein's banner conferred upon them. Brazilian intellectual historians view this episode as marking the end of positivist control of Brazilian science, which created a new environment which was to prove favorable to the extraordinary growth and accomplishments of Brazilian physics in the 1930s and 40s.

NOTES

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[48]The text of Einstein's words is given In *Dos Idiche Vochenblat*, cited by Falbel, "A visita de Alberto Einstein," p. 138. Except for its closer attention to Zionist issues, the Yiddish newspaper's coverage of Einstein's trip was no different from that of the Portuguese-language press, either in scope or in emphasis.

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