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THE DOS BOCAS OIL WELL: SCIENCE, IDEOLOGY, MEMORY AND DISCOURSE¹

El pozo petrolero Dos Bocas: entre ciencia, ideología, memoria y discurso

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ABSTRACT

In this paper, we recover the memory of a catastrophe: the Dos Bocas oil well fire in the Huasteca region of Mexico in 1908. The Dos Bocas event is described, contextually analyzed, and identified as discursive material of different groups of influence and/or power, in order to shed light on the situation that existed in Mexico and the expectations held in relation to the role that science, technology and the exploitation of natural resources should play in the country's development. For this purpose, we first present what was the

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official philosophy of the regime in regards to a political agenda as well as an educational ideal. Subsequently, presenting a condensed picture of what were the beginnings of oil in Mexico, the role of foreign investment and the socioeconomic and ecological impacts. Once having established the context of the moment, we examine the Dos Bocas event and the ways in which it was handled politically, along with the ideological and scientific factors operating at that time. Finally, we address the various meanings and interpretations of the event, identifying collective forms of understanding and appropriation of the experience; found memories that will allow us to explore how the evocation of a singular event, in this case a catastrophic one, becomes part of the hegemonic discourse on the role of oil in Mexican modernity.

Keywords: Oil, Mexico, science, ideology, memory, discourse.

RESUMEN

En el presente ensayo acudimos a la memoria de una catástrofe: el incendio del pozo petrolero Dos Bocas en la Huasteca Mexicana en 1908. El evento de Dos Bocas se describe, se analiza contextualmente y se le identifica como materia discursiva de los grupos de influencia y/o poder, con objeto de dar luz sobre la situación que se vivía en México y las expectativas que se tenían en relación al papel que deberían de jugar la ciencia, la tecnología y la explotación de los recursos naturales en el desarrollo del país. Con este propósito presentamos primeramente lo que era la filosofía oficial del régimen tanto en su sentido de proyecto político, como de ideal educativo. Posteriormente se presenta una imagen condensada de lo que fueron los inicios del petróleo en México, el papel de la inversión extranjera y los impactos tanto socioeconómicos como ecológicos. Una vez habiendo establecido el contexto del momento, examinamos el evento de Dos Bocas y las formas en que fue atendido políticamente junto con los factores ideológicos y científicos que operaban en el momento. Finalmente, abordamos los diversos significados e interpretaciones del suceso, identificando las formas colectivas de entender y de apropiarse la experiencia; memorias encontradas que nos permitirán explorar cómo la evocación de un evento singular, en este caso catastrófico, se convierte en parte del discurso hegemónico sobre el papel del petróleo en la modernidad mexicana.

Palabras clave: Petróleo, México, ciencia, ideología, memoria, discurso.

INTRODUCTION

A traumatic and catastrophic event may operate as a breaking point that defines new paths and ways of understanding oneself as a country, a society, and a collectivity. Its contextual analysis allows a glimpse of the meanings in a multidimensional space that can lead us beyond the event itself, and helps us

discover an historic timeline, specify the role of diverse players related to the event and identify their discourses, and distinguish different interpretations in them for understanding and giving meanings to the events.

On July 4, 1908, one of the most important oil accidents in the history of Mexico occurred. This took place in the Dos Bocas oil well in Veracruz, where a blowout of crude oil and a fire was generated that lasted for almost two months until the oil deposit was burned out. The historian José López Portillo and Weber describe the event as follows:

The unexpected and thick clouds of unbreathable gases, and the huge pressure that emerged from the Dos Bocas oil well, scaring and surprising all the well drillers that had not extinguished the fires in the nearby boiler storages, those which ignited the vapors when the oil well was set on fire, illuminating with its flames a surface as large as a country. The well drillers did not know what to do. The oil well extinguished itself, many days later, after the depletion of combustible material. And about the deposit. It was formed by then, for the memory of the tragedy, a salty water lagoon, boiling, with the bubbling of unbreathable, pungent smelly gases; a spherical lagoon, almost circular, surrounded by the hems of burned forests, of which only stood trunks and trunks of dead trees, stripped, bone colored. It is an end of the world landscape (López Portillo & Weber, 1975: 28).

This event is considered a disaster, which, on one side meant a trauma, especially for the inhabitants of the surrounding areas that lived a radical life changing experience, but on the other side, it represented an opportunity to stoke a discourse in favor of Mexico's progress based on the exploitation of natural resources. The Dos Bocas accident occurred in a critical moment of the last stage of the *porfiriato* in Mexico, where a political group called the "scientists", seek to attract enlightenment and progressive ideas from other countries.

The present paper is focused on the Dos Bocas event, which is described, contextually analyzed, and identified as discursive material about the groups of influence and/or power, in order to shed light on the situation that existed in Mexico and the expectations held in relation to the role that science, technology and the exploitation of natural resources should play in the country's development. For this purpose, we first present what was the official philosophy of the regime in regards to a political agenda as well as an educational ideal. Subsequently, presenting a condensed picture of what were the beginnings of oil in Mexico, the role of foreign investment and the socioeconomic and ecological impacts. Once having established the context of the moment, we examine the Dos Bocas event and the ways in which it was handled politically, along with the ideological and scientific factors operating at that time. Finally, we address the various meanings and interpretations of the event, identifying collective forms of understanding and appropriation of the experience; found memories that will allow us to explore how

the evocation of a singular event, in this case a catastrophic one, becomes part of the hegemonic discourse on the role of oil in Mexican modernity.

LIBERAL REFORM: POLITICS AND EDUCATION

This is not the place for a deep study of the ideologies that defined Mexico in the late XIX century and beginning of the XX, but it is necessary for our goals to establish some elements that allow us to demonstrate a context that helps us understand the event, which the title of this paper makes reference to, as a breaking point to strengthen the discourse, political on one side, scientific on the other side, which were found to be in vogue. Fundamentally, we want to establish and put in perspective the “scientific politics” that a group of people close to the political power thought important to promote, and also show the ideologies that sought to guide education on a particular course.

In this way, our starting point will be the liberal reform and we believe that for our objectives it is appropriate to recover the vision presented to us by Hale (1991) in his book *“The Transformation of Liberalism in Late Nineteenth-Century Mexico”*. This author adopts the most contemporary concept of “scientific politics” and applies it to the Mexican context after the liberal reforms of 1867, identifying how Mexico adopted European positivism and its influence in education and social politics. The pro-government visions of history tend to cancel the *porfiriato*, simply considering it as a prelude to the Revolution, as a period in which liberal ideals were set aside in favor of an authoritative government. On the contrary, Hale proposes the thesis of a Liberal continuity¹ and seeks to show the relationship between liberalism and that “scientific politics” that he identifies as key in an intellectual atmosphere source strongly influenced by the positivist European tendencies, whose thinking consisted in the application of methodological principles of natural sciences for studying society.

To strengthen the power reached by the liberals, a philosophical context was also required, which was found in the thesis of the French author Auguste Comte². Gabino Barreda is usually presented as the main person responsible

¹ Liberalism is sustained by the consideration of the individual as free and in the ideal of social and economic progress. In Mexico, liberal ideals may have their origins in the 1820-1840 period, and would see their fulfillment in the Constitution of 1857 and in the Reform Laws, and convert into a “unifying political myth” (Hale, 1991: 15).

² This may correspond to an ad hoc adaptation of the cited philosophical system. In that regard, Leopoldo Zea tells us that “Positivism will be a doctrine with universal pretense, but the way in which it has been interpreted and used by Mexicans, it is Mexican. To be able to know what is Mexican in this interpretation, it is necessary to go to our history, the history of the men that used positivism to justify certain interests, which are not the same of the positivist creators of the system (Zea, 1968: 27).

for the adoption of positivist ideas. In his famous “*Civic Prayer*”, delivered on September 16, 1867, he presented an analysis of Mexican society, adapting the thesis of the three stages of knowledge by Comte: theological, metaphysical and positive. For Barreda, the colonial past corresponds with the theological stage, the fight between liberals and conservatives was the metaphysical stage, and finally, the positive stage had been reached with the triumph of the Liberal Reform. The latter would lead policies based on science, from where by using “liberty as a tool” and “order as fundamental”, we could walk “through the flowery path of progress and civilization” (Barreda, 2003).

The fundamental tool for realizing the liberal program would be educational reform. In the year 1868, under the direction of Barreda himself, “*Escuela Nacional Preparatoria*” opens its doors on San Ildefonso Avenue in Mexico City, where “the didactic proposal of Comte would be practiced” (Cardoso, 2005: 188). It envisions a fundamental formation of a civic spirit, the foundation of which would be a “common fund of shared truths” (Barreda, 2003), truths that identified (themselves) with those offered by science. Thus, “scientific education, secularism, constitutes the common base over which the essence of the liberal regime is held, on a par with the guarantor of order and individual liberties” (Estrella, 2010: 149). As part of this educational model, humanistic knowledge was marginalized and logic was preferred as a discipline that could act as the focus and basis of the particular sciences.

Disciples of Barreda were a group of intellectuals, among them we would find Justo Sierra, Telésforo García and Francisco Cosmes, who between 1878 and 1880 constructed and disclosed, in a newspaper called “*La Libertad*”, a political agenda based on “scientific politics”, in which they would defend conservative liberalism and argue for the reform of the Constitution of 1857, conducive to strengthening the government and leading the country through economic progress (Hale, 1991: 42-43), thus, giving the adoption of positivism a political twist that would include doctrinal aspects that were not present in the vision of Barreda, and that would function as an ideology of the porfirist regime. Some of the writers of “*La Libertad*” would later become part of the group the “scientists”, led by José Yves Limantour, who created the Liberal Union Party in 1892, which served as an legitimizing agent of the re-election of Porfirio Díaz in that year. The intellectuals that comprised this group would be very close to the political power, some of them as heads of state in Díaz’s government, and to protect their own interests, would adopt positions much closer to Herbert Spencer’s ideas about social Darwinism. In this regard, they fueled the ideas that all of society is a combat field where only the “most prepared” survive, those that have achieved high economic success and those who are left to direct the rest of the people with lower capacities. The priority was to transform the country from a material point of view, even though that wealth

was accumulated only by a few. There would be time to reach civil liberties after having led the nation to a stage of order and progress so that to truly achieve the inalienable rights of the individuals who are referenced in the Constitution of 1857, first, “it is necessary to make them strong biologically and materialistically through free economic competition”. Only when this stage has been achieved will there be advancement in the field of political and individual liberty” (Estrella, 2010: 160-161). The “scientists” laid the foundation for the construction of a productive and communicative infrastructure that would be able to attract foreign capital. They are usually described as technocrats and conservatives and they have been accused of forming an oligarchy that sought their own benefits and in the attempt to modernize the country, the foreign companies that came attracted by oil exploitation and other natural resources from the country mainly benefitted at the expense of exploiting the low income population.

It is possible to place the year 1982, with the creation of the Liberal Union Party, as the moment in which positivist thinking in Mexico reaches its peak among the Mexican intellectuality and begins its decline. Said group would oppose the vision of a new generation that would consider the scientific vision of positivism as biased, and which had become compulsory and part of the educational routine. Later, this new generation founded in 1909, the “Ateneo de la Juventud”, a civil organization that among its members were found Alfonso Reyes and José Vasconcelos, who spoke out against positivism because they believed that it had limited the freedom of thinking and that the problems of Mexico required a broader educative vision that did not relegate arts and humanities (Zea, 1968: 438). In fact, it’s commonly believed that the “Ateneo de la Juventud” and the Mexican Revolution established the end of positivist philosophy in Mexico (Illades & Rodríguez, 2001: 6). Justo Sierra himself, one of the most important characters of that time and that “reflected so well the long period in Mexico’s history from liberalism to the Mexican Revolution, with *porfirism* in the middle” (Zea, 1956: 173), shared these concerns in the first decade of the XX century and was an author of a new educational system that would highlight the creation of the Universidad Nacional de México, today UNAM, in 1910.

Hence, we are located in the first decade of the XX century, which would represent the end of the *porfiriato* and the beginning of the Revolution that was brewing, among other things, by the deterioration of the old regime, the outcry for social justice that several popular groups lacked (farmers aggrieved by the expansion of modern farms, workers exploited by foreign companies, etc.) and the necessity of a new vision for education that would recover the ideals of liberalism. Not an undermined liberalism like the one that occurred with the *porfiriato* that considered it necessary to sacrifice certain liberties in favor of material and economic progress, which at the end would only satisfy a privileged group and foreign nations who opened their doors for

the exploitation of the country's natural resources. The new revolutionary ideals would discuss the simultaneous pursuit of freedom and material wellness, although on the other side, it would narrow some liberal ideas in favor of protectionism and socializing elements (Zea, 1956: 17). Likewise, in the field of education it was necessary to break from the monopoly of positivist thinking that was used to justify the political agenda and equip Mexicans with an education without discrimination, carrying

the instruction, according to the desired progress, to the classes that were able to make it possible with their work. The instruction could not be any more prerogative of certain classes if it aspired to incorporate all the citizens in a common task [...] It was necessary to offer to all the Mexicans the same opportunities of instruction, of preparation, in a way that could multiply the active elements of the nation (Zea, 1956: 26).

Thus, new ideas of educational and political character rose to the limelight in the debate with all of its implications in all of the themes of national interest, including those referring to the exploitation of natural resources and the role of foreign powers. Later in this essay, by analyzing the Dos Bocas event that occurred in 1908, and the reactions that it prompted, it will be interesting to distinguish different voices in a moment of transition in the Mexico's history, a period in which the *porfirian* slogan of order and progress was still active, but in which the social discomforts arose with force and responded to the enforcement of the political agenda that marginalized them.

THE BEGINNINGS OF OIL IN MEXICO

With certain irony, we are reminded by Jesús Silva Herzog that “towards the end of the XIX century and the first months of the XX, national and international geologists said in an adamant and emphatic way that there was no commercially affordable oil in Mexico” (Silva Herzog, 1982: 27), which contrasts with the horror story that would occur a little after when discovering Mexico's oil potential, which on one side would give to birth to the “myth of oil emerging through millions of cracks and crevices along the Caribbean shore [that] attracted hundreds of adventurous seekers to Mexico” (O'Brien, 1977: 108), but on the other side, gave way to a stark struggle for the wealth that this natural resource represented, where:

the bribery, deception, kidnapping, plundering, weeds among family members, robbery, the fire to destroy legitimate scriptures, terror and crime all planted sadness, misery, grief and desolation in many parts of the country in whose subsoil had oil (Hermida, 1991: 51).

We would have to review, even if succinctly, the world origins of this voracity for oil. The exploitation of it originated around 1870 for obtaining kerosene by a distillation process, becoming the quintessential way to “enlighten the world” until the early arrival of electricity, but it would take power and would grow exponentially due to the birth of the internal combustion engine, which would ultimately replace the steam engines as the means to move the world. Oil rapidly became the strategic factor in the industrial process and in transportation systems.

The oil industry had its beginnings in the United States of America. In 1859, the first well in Pennsylvania was drilled, thus, proving the possibility of extracting crude oil from the subsoil by means of drilling in the same way that it was done with the search of water (Álvarez, 2005: 31-32). In 1870, John D. Rockefeller created the Standard Oil Company of Ohio, which acted as the spearhead for the USA to become the leader in oil production for a considerable amount of time. Russia would follow, standing out as the second biggest producer of oil until the First World War, and later, Romania, India, Japan, Germany, Mexico, etc. would join as oil countries; thus, the exploitation of oil began to grow in an extraordinary accelerated manner and would transform economic, social, and political life all around the world.

In Mexico, oil was somehow a known substance in pre-Hispanic times, and also later, throughout colonial times, through surface deposits of *chapopotli*, which were used for different purposes such as “medicinal ointment, toothpaste, adhesive, waterproofing or a ceremonial element” (Álvarez 2005: 17). However, the facts that interest us now are those associated with the modern history of oil, whose beginnings can be found in the late XIX century. There is a long list of unfruitful attempts to make oil extraction a profitable business in Mexico (Álvarez, 2005: 18-21). For this reason, it is very important to point out the legal changes that, in the light of new liberal ideas, occurred in regards to the land ownership. Until 1883, the legal principle from Spanish laws about underground property designated the kings of Spain, and later the State, as the rightful owners, but with the ability to grant concessions for the exploitation of that wealth. However, from that point on, and following the new Miner Code of 1884 that followed the new liberal principles, things would change and the result was the combining of the property of the subsoil to the soil. More concretely, the “Miner Law of July 4, 1892 [...] reserved the property of the subsoil for the Nation, but declared the exploitation of mineral fuels that could be made by the owner of the land free” (Silva Herzog, 2008: 11).

The first foreigners to venture into the exploitation of oil in Mexico with success were the businessmen Edward L. Doheny, who following the advice of the Mexican geologist Ezequiel Ordóñez, discovered the *Faja de Oro*, and Weetman Pearson, an English tradesman, also a pioneer in the oil industry. The Dos Bocas oil

well, the central topic of this paper, belonged to the latter businessman and, as we will see later, became a prime example of securing huge oil wealth in the Mexican subsoil. But, wealth for who? The first oil law, dating from 1901, stipulated that the owner of the land was also the owner of the subsoil, that national territory could be exploited and that only 10% of the profit would stay in the Mexican government. The license to Pearson and Sons to extract oil was granted in 1906. It was the biggest oil concession up until that point and Pearson won it because he had “practiced a type of business diplomacy” and thanks to the “tight relationships [...] with members of the Díaz regime” (Brown, 1998: 66-67)³. Although, it was originally stipulated that the company would only drill on land belonging to the country, later, this authorization was extended to drill on private property without having to deliver the 10% of the profit, but only a minor tax. According to the opinion of Silva Herzog, with the arrival of foreign oil industries “we traded the wealth of the subsoil for low salaries and petty taxes” (Silva Herzog, 1982: 35).

As we explained in the previous section, during Díaz’s regime, positivist economics, i.e. the “scientists”, considered that the future of Mexico depended on good administration exerted by a rationalistic elite based on scientific principles that would lead to economic growth. This vision led the *porfirist* government to cooperate with the foreign investors in an extraordinary way by extending special privileges. According to Brown’s opinion (1998: 113), for historic and political reasons, it was not convenient that it appeared that the Mexican economy moved in accordance with North American interests, for that reason they showed certain favoritism towards European businessmen, offering broad advantages, as was the case of Weetman Pearson. The company founded by him, called “Compañía Mexicana de Petróleo El Águila” survived and became the largest oil company in the country.

However, little by little, throughout the first years of the XX century, revolutionary trends would express the conflict between economic development and popular will, giving place to a rebellion against the authoritarian government that had prevailed in Mexico for decades (O’Brien, 1977: 105) and that had as a precedent new political ideas that went against the social exclusion that had reached unbearable levels and the reductionist vision of scientism. Thus, the reputation of Díaz was diminishing, although his economic politics had a lasting effect, and the economic nationalism promoted by the Revolution would weaken the resistance of the foreign oil companies. From that point on, British and American investors would have to deal with new administration that would increase taxes and minimize property rights for the foreign companies, on a par with the fact that the working

³ PearSons had served as the favorite contractor of Díaz’s through his engineering business, the S. PearSons & Sons Limited, completing major works such as the National Railway of Tehuantepec (Álvarez, 2005: 38).

class would little by little present their own demands against the harsh treatment and lack of guarantees for the worker. The union of these two elements would culminate to peak in a nationalization that would claim that by law the ownership of the oil belongs to Mexicans (Brown, 1998:113). But for now, towards the end of the porfirist era, the oil boom was at its highest point and would be a topic of political and social discourse that would confront several groups of interest, a matter that will be discussed in the following sections.

However, before entering in this discussion it is suitable to establish, as part of the background, that if it is about the history of oil, it is very important to localize human actions inside a network of social, political, economic and ecological relations, the latter being especially relevant in the event of the Veracruz Huasteca, the geographic location of the oil well Dos Bocas, and where, under the impact of capitalism and industrialization, the landscape, once a tropical forest, was radically transformed (Santiago, 2011: 32). In this region, the extraction of oil led to a sociocultural mutation and the creation of a completely new ecology, a process that can be summarized in three categories: changes in land possession patterns at a local level, a metamorphosis of the land use at a local level, and the transformation in the local social structures.

In regards to land possession patterns, before the arrival of the oil companies two systems co-existed, the communal land from aboriginal traditions and private property inherited from colonization, also applying to privileged Spanish families, a reality that was transformed in a little more than a decade as the oil companies continued gaining control of significant areas of the tropical forest, which was marginalizing the indigenous population. The second change, in regards to land use, consisted in the transformation from an indigenous agriculture and a livestock economy to fields of oil extraction and processing plants that implied the destruction of many ecosystems in the northern part of Veracruz. Finally, there was a rearrangement of the social structures due to the importation of the workforce in great amounts that displaced the native groups, creating a hierarchy in which the executives, European and American professionals would be first, followed by the specialized working class and at last, the Mexican workers destined for the lowest level and highest risk jobs (Santiago, 2006: 5-6).

This complex process of change was the result of deliberate and direct human actions that responded to a social reality, to specific interests of empowered groups and certain ideologies. British and American investors started the oil industry in Mexico with the support of the men from the *porfiriato* that dreamed of transforming Mexico into a capitalist country, under the shared idea of progress based on the control of nature for the production of wealth. With this ideology, the oil men transformed the Huasteca into a capitalist microcosm, feeling like they were pioneers and deliverers of the civilization process.

THE DOS BOCAS EVENT: IDEOLOGY AND SCIENCE

Under this ideology began the exploration for oil in Mexico, that even though it would report huge earnings for some, it would mean tragedy and a lifestyle transformation for others. Additionally, some key moments, like the one discussed here, represented a breaking point in the perception about the country's natural resources and the role of science and technology. For that purpose, in this section we will describe on one side, the accident-disaster of the Dos Bocas oil well, focusing on its impact and consequences from a social and political point of view. On the other side, we will show the importance of the creation of the Geological Institute of Mexico as a prime example of the state of science and technology in Mexico.

The San Diego del Mar number 3 oil well, remembered as “Dos Bocas”⁴, that was exploited by the company Pearson and Sons, exploded and caught on fire when the drilling operations were in effect on July 4, 1908. The fire remained active until August 30 of the same year, until the oil deposit burned out completely. In the course of almost two months, tens of thousands of oil barrels flowed outward, severely affecting the ecology of the place and turning this event into one of the largest disasters in the history of the oil industry. Fearful results no doubt that left an indelible mark on the landscape that lasts up to our present day, but that on the other side, would function as a “flaming announcement to the world of Mexico's presence as an oil country” (Santos, 1988: 24) and allowed to “affirm the huge oil wealth of the Mexican subsoil” (Silva Herzog, 1982: 29). Greatness in the resources of a country that, considering the unfavorable internal political circumstances to really take advantage of it, would allow the deposits of *Faja de Oro*, discovered because of this event, to be a treasure for foreign powers.

San Diego del Mar is located in the canton or municipality of Ozuluama, a little more than 100 kilometers south of Tampico and a few kilometers from Lake Tamiahua. The accident was of enormous proportions. A combination of natural factors, such as the presence of highly toxic and flammable gases and extremely high temperatures, ensured that the oil in the insides of the Huasteca would be found at a very high pressure and would possess an extraordinary destructive capacity. When the drill broke the rock over the precious liquid, the oil literally came out fiercely expelling towards the exterior. It formed a crater that made the structure placed there for the process of drilling and extracting disappear. The workers escaped from there. One of them tried to turn off the heat boilers that

⁴ The “Dos Bocas” denomination, according to some version, it is due to the fact that in the accident, additionally to the crater of the original oil-well, a second natural crater was naturally opened due to the huge pressure generated.

were used to provide energy to the machines, but the oil was able to fall on the coal ashes, igniting the oil well and producing an explosion that shook the earth several miles around (Santiago, 2006: 133-135).

The efforts to smother the fire and the outbreak were unfruitful, revealing the lack of technology to fight these types of accidents despite the half century of experience that the oil industry world had at that moment. Since the locals refused to participate in the work, Pearson and Sons was forced to ask for help from the Mexican government to fight the fire and try to contain the oil spill. They sent more than 400 soldiers from the *zapadores* to fight the forces of nature (Santiago, 2001: 86). The work done was diverse: by the use of a centrifuge pump, 3000 tons of gravel and sand were thrown in an effort to smother the fire, a dam was made from dirt and logs, gates and two large rectangular tanks were built to store 500,000 barrels, gaps in the forests were opened and pumps were installed, along with other activities (García y Valdéz, 1995: 111).

During the months of conflagration, the oil formed currents that eventually reached the Carbajal River, flowing towards the swamps that surrounded Lake Tamiahua, encroaching on the lake itself from the south shore with an estimated of ten thousand barrels (Santiago, 2001: 85). San Diego del Mar and the surrounding areas would not be the same again. Six months after the event, the engineer Juan Villarello reported that even though the oil was now not found in the Carbajal River, it continued contaminating the lake (Villarello, 1909: 34). Later on, the geologist Charles Hamilton reported that

The potent hydrogen sulphide [sic] gas had killed everything. What had been lush monte was now a gaunt specter of dead trees. The air stunk with the smell of rotten eggs. There was no sign or sound of animal, bird or insect life. Nothing stirred in the breeze. The silence was appalling. It was eerie and frightening. [...] Through this swamp poured the overflow of hot salt water, forming an oily stream without any vestige of either plant or fish life [...] It was an awesome sight. It smelled and looked like I imagined hell might look and smell (cited in Santiago 2006:139),

as a witness of the extreme danger that this event represented to life and its permanence as an long term environmental threat. Moreover, years later the journalist Santos Llorente, in the year 1988, reported about that the place

it still exudes the smell of gas [...] and in all its space and surroundings there are no birds or insects. The grass is just only beginning to appear and it's been five years since the lake bubbled, and that is why the indigenous people went to heal their diseases by submerging their feet in the hot water (Santos, 1988: 24).

Nightmarish scenes all of the above, that speak to us about a “paradise” converted into “hell”. But as we said since the beginning, we want to go beyond the event itself and take a look and interpret it from the human, the social side, understanding the event and its meanings in the ideological context and power games involved, seeking elements that result illuminating in regards to the political game in which it was framed.

García and Valdéz (1995) reveal to us, as a result of the research in the General Files of the State of Veracruz, some of the communication between different authorities in Pearson and Sons and government entities. Heladio Arellano, political chief of the Ozuluama canton addressed the governor of Veracruz, Teodoro A. Dehesa, as well as the Secretary of Economic Development, demanding a technical committee to decide on the state of the oil well. The secretary left the company Pearson and Sons in charge of the creation of the technical committee and urged the governor to “dictate measures to prevent the recurrence of accidents and that ensure the good state of public health in every sense possible” (112-113). As it is explained to us by García and Valdéz, to delegate the evaluation to the British company itself, it highlighted

the sense that the *porfirist* industrial development policy left industrial development of the country in the hands of foreign interests, optimistically believing that in this way a solid base would be created to sustain national economic development, (118).

which of course turned out to be false and only showed the ignorance and prepotency of a political class in which the discourse revealed an adherence to liberal principles, but in practice protected certain groups of power, among them those associated with foreign investment, in disservice to the rights of local and sometimes marginalized communities.

Weetman Pearson and Edward Doheny are the iconic figures of these elite in the case of the oil industry in Mexico, which somehow speaks to us, at a local level, about this inheritance of the nineteenth century world in which the industrial and scientific culture merged as a social business, under the slogan of the transformation of natural forces and with the objective of extracting the power and wealth that was hidden there, a unique vision about the relationship between men and nature (Santiago, 2006: 144-145). Ultimately, the ideological belief in progress and the command to subjugate nature to the well-being and benefit of humankind, under the tools of capitalism and industrial technology, converted the oil industry, among others, into a “powerful source for social change” (Brown, 1988: 83).

The above leads us to remember that the procedure of the government at the time was largely justified on the basis of positivist ideology that prioritized the benefits of scientific and technological development, and in that way influenced

on the one hand, educational politics as the attraction for foreign investment to “modernize” and lead Mexico along the road to progress. Although, on the other hand, already starting to be heard were the contentious and revolutionary voices that declared themselves against these doctrines and opened several opportunities for political debate, in which there would be voices that would speak of the negative effects, the environmental and social character of the dominant forms of political leadership.

The truth is that the Dos Bocas event put us in a very interesting moment that brought to the light several points of view on industrial development in Mexico that were seeking to leverage scientific-technological knowledge and the exploitation of the country’s natural resources. The report of Colonel Arnaldo Casso López, in charge of the *zapadores* battalion reveals, as part of his discourse to communicate and explain the event that occurred, included some aspects of the state in which science and technology were found to be related to oil exploitation. It states that “geology is a science completely modern [in which] the scholars [...] still ignore what is going on in the depth of the earth’s crust” (cited in García and Valdez, 1995: 114-116), but speaks of the known theories up to that moment about the origin of hydrocarbons and reveals some aspects of technological character of the exploitation of subsoil, and according to that, the causes of the accident.

Consistent with *porfirist* politics, several important scientific societies and institutions⁵ were created in Mexico. To understand the dynamic of these organisms at the turn of the century, as an example let’s use two of them that are very important in regards to the topic discussed here. We refer to the National Geological Institute and the Mexican Geological Society. As a background, the agreement for the creation of a Geological Commission was registered in 1888, under the Secretary of Promotion, Colonization and Industry supervised by General Carlos Pacheco, with the mission of studying the mineral resources that Mexico had, and that at the end gave birth to the National Geological Institute⁶ in 1891, one of its objectives being to develop geological maps of the country. In 1904, the idea came to some specialists of the area to develop a society that allowed the creation of synergy between the diversity of studies and geological observations that sometimes went missing in the informality. Thus, in that year the Mexican Geological Society was founded, whose activities would be in parallel to those of the Institute, and it would group professional and technicians dedicated to earth science. The labor of both the Institute and the Society

⁵ Some of the most important ones are: the Mexican Society of Geography and Statistics, founded in 1833; the Mexican Society of Natural History, founded in 1868; the Antonio Alzate Scientific Society, established in 1884; and the Mexican Geological Society founded in 1904 (Gómez-Caballero, 2005: 150-151).

⁶ In 1929, it would be converted to the Geological Institute of the UNAM.

consisted mainly in “developing geological research necessary for the exploitation of natural resources” (López, 1976: 91). The National Geological Institute Bulletin began to be published in 1895 with the objective to serve as the broadcasting media of the “geological study of Mexican territory, making it known through scientific and industrial points of view (Gómez-Caballero, 2005: 153). In this bulletin, and in others such as the one from the Mexican Society of Geography and Statistics, it was usual to publish topics related to oil exploration and exploitation, including stories related to the Dos Bocas event such as those discussed in the following section.

MEMORIES IN PLAY, DISCOURSES IN OPPOSITION

The entrepreneurs of the oil business started the industrialization process in Huasteca. Their arrival determined the completion of the port in Tampico, that telegraph lines were suspended overhead and roads were built, etc. The process, which implied the construction of industrial workshops, pumping stations, pipelines, small refineries and so on, would end up changing the landscape of the northern part of the region from Veracruz to Tampico (Santiago, 2011: 45). However, all this modernity would also mean deforestation and environmental degradation, thus, giving place to two encountered discourses that can be even seen today, but that become evident after the breaking point that we identify as the Dos Bocas event.

The Dos Bocas event, as an example of the strength of nature when released by the hand of the man, was a phenomenon that understandably aroused curiosity and wonder nationally and internationally. The press coverage told stories about the crusades of the men against nature, about the strengths of the modern industry that went out of control and about the battle to extinguish the fire. But the memory of a transcendental event is built on time and through the expression of several agents in the local and national scene. The many stories and/or memories can be so diverse that may become hard to believe that they come from, or make reference, to the same events (Cronon, 1992: 1348).

People from that region had had, in a sporadic and apparently disconnected manner, several encounters with this process of foreigners arriving to exploit national territory. Some had had to make deals with the oil companies in regards to the use of land, for others, their properties were affected by the construction of some communication path, others were just simply witnesses of the construction of a drilling tower, etc. (Kuecker, 2012: 69). This diversity of experiences represented individual interactions with the new industry, but that had not given up to that moment the opportunity to provide a collective meaning of the changes that were happening. The Dos Bocas event, as a breaking point of this process, can

be considered as the first encounter of the community with the oil that allowed a threatening perception to emerge in regards to the oil industry, which meant a lesson about the dangers of messing with nature.

This threat, as explained to us by Kuecker (2012) based on some press reports, was expressed during the unfortunate events of the oil well in several ways. As a start, simply as an alarm for the uncertainty about how the phenomenon that could be observed from Tampico could be solved and the immediate concerns for relatives working in the oil fields. In a second instance, it was manifested as fear when they realized how unsuccessful the efforts were in fighting the conflagration, to such an extent that some foreshadowed the end of the world and that in fact, provoked some to flee in panic. It also awoke rumors and complaints about the possibility that the fire had been intentional as a response to the breach of treaties between the land owners and those that were exploiting the land, which is indicative of the uncertainty that existed in the ways in which the oil industry was being developed. In a fourth instance, there was also the threat perceived by the traders, who feared that the event would provoke heavy losses due to the effects on local transportation as well as the repairs of the docks, losses of livestock, crops and fish poisoning. And lastly, the perception of facing an “enemy” against which they had to fight, giving the feeling of a war zone (68-69). In summary, the Dos Bocas oil event was acting as a breaking point to group those individual interactions into the common perception that oil had radically altered their lives.

Against this perception, another was built that would be the official one, that would work a dominant power and at the end would prevail. We are talking about the interpretation of the facts, and with this the construction of a national memory about their meanings of the same, that would come from the regime’s ideology that was represented by the “scientists” group of Porfirio Díaz’s government, and to which several players were added: media, technical and scientific community, teachers, etc. As an example of the emerging discourse, we will make a brief reference to the report about the phenomenon that Juan Villarello wrote in the National Geological Institute Bulletin and a brief analysis of what was reported, examined and disclosed by Enrique Juan Palacios Mendoza, who formed part of the *porfirist* intellect of the time, in a text published in the bulletin of the Mexican Society of Geography and Statistics (Palacios, 1908a) intended for the professionals in the branch of earth science, and was also used as a foundation for giving a conference in the Escuela Nacional Preparatoria (Palacios, 1908b).

Juan Villarello was the leader of the commission sent by the president of Mexico to study the Dos Bocas phenomenon. His report (Villarello, 1909), published in the Mexican Geological Institute Bulletin, was divided into 4 parts. In the first part, he describes the geology of the region, and it only reports the same that was previously reported by the same institute before the accident in a

paper entitled *Some Oil Regions of Mexico* (Villarello, 1908). In the second part, he describes the phenomena that occurred there. In this document Villarello begins by characterizing the phenomena that happened there as “scientifically very interesting” (16) and proceeds to explain, with great description and technical language, the measurements carried out there and what the commission found. Beyond the objectivity and the scientific rigor of this part, it is interesting to observe the inclusion in the discourse of an intention to minimize the catastrophic events, by saying that “the fire did not spread in a very notable way from the surroundings of the oil well and the vegetation did not suffer very much” (18) and for giving the event the principal importance of being “very interesting for scientific studies” (19). He comments that for some unfortunate events, “it was believed justifiable to say that: this whole region is deadly” (22) and that consequences have been mentioned in regards to fishing, the traffic in the lake, and the risk of a new fire, but he qualifies them as “very exaggerated and others completely false” (p. 22), commenting on the basis of the measurements that the commission carried out that “soon the name of the deadly region, exaggeratedly given to the entire zone, will be forgotten”, that “the dangerous zone extends to a maximum (sic.) of up to five hundred meters around the well” (p. 49) and that “the capitalists and workers (could) go to this region, exploring the oil underground without worrying about the temporary phenomena produced by some gases, whose harmful action may be easily avoided if necessary (24-25). In the third part, the author describes the work carried out to avoid the conflagration and describes the risks that the event represents, which he again minimizes, referring to them in a positive tone at the end of the document, to the “immediate consequence [...] to [...] the development of the industry and commerce throughout this entire interesting oil region” (97). Finally, he refers to the necessity in continuing the work in progress and the importance of continuing with the oil exploration in the zone.

The previous description is valid for understanding the tone of an essentially technical report about the Dos Bocas event. However, in our view, the text that results to be more interesting is that of Juan Palacios, who, although imbued in the scientist spirit of that time and being professor in the Escuela Nacional Preparatoria where a didactic proposal of that kind was followed, we found ourselves closer to the new generation that began to see strict positivism suspiciously, that it was soaked in the ideology of the *porfirist* government. Perhaps this is revealed in his formation - not only was he a scientist, but also a writer and historian- and in his subsequent affiliation to the “Ateneo de la Juventud” that competed for a more broad educational perspective. Because of this, it’s understandable the interesting poetic-historic mixture and the emotional and motivational elements that this dissertation is imbued. The text is entitled *Memories about the Fire of the Dos Bocas Oil Well* and is based on his experience as a witness of the phenomena and as a

boss of the expedition sent to the location by the Public Instruction Ministry, in which he was accompanied by “the distinguished alumni of the Engineer School, Mr. Ignacio Medina and Mr. José Treviño, plus two alumni of Arts and Trades” (Palacios, 1908a: 40).

In the first part of the text called *First News of the Phenomena - Background*, Palacios realizes that the phenomena that was filled “of stupor for those that enjoyed the fortune of beholding such a marvelous spectacle” (Palacios, 1908a: 3). He provides a glimpse of previous reports of the conflagration provided by other witnesses and soon he goes ahead to characterize the phenomena in a similar way to the Villarello report, as “interesting for science [and] to engineering” (5). To contextualize the interest of the “scientific world and the educated public from everywhere” (6) he does a bit of a narrative by warning about how progress has already been coming to the region by the modern media (railway, telegraph, etc.), thanks to which “the trade arises then and it is developed together with the industry” and behind that forefront “education [goes] rehearsing the national unit, and art and science planting their first seeds” (8), according to the *porfirian* vision of that time.

Palacios chooses a poetic tone to talk about How was the Dos Bocas Fire in the second part of his report. The narrative, filled with parables, takes notice of a majestic disaster that in that time left those who had to go to the furious call of the fire undaunted. Not even the senses or reason could have realized what was happening because nothing like it had ever been seen before:

The smoke slowly grew in sight, fringed in moments by flames, like a monster of dark hair crowned by a wide and glowing fire. As one progresses over the steel waves, the clouds more threatening and more important appear. Such would be if the angry cyclops who shakes it would want to stop it, scaring the brave Argonauts coming to his assault [...] such it looks like a tremendous struggle develops in that chaos, sustained by mutant monsters, born within the Horror and the Night! [...] filling with fear to the same horror, of admiration to the exalted mood (10, 13 and 14).

In the last part of this section, and in those that follow, entitled *Data and Calculations, Future of National Industrialism and The Oil of Huasteca* gives a spin on his speech, it moves away from the initial emotion of the event and proceeds “with a serene heart [...] contemplating this fire, determined to measure it [even though] the stupor invades the reasoning, as reason seizes the phenomenon” (15). It is time to deploy scientific reason around the phenomenon, so that it tells us “Does this belong to reality or are we in an imaginary world?” (16) and science and technology will answer us: “Truth were the stories transmitted in the beginning by the travelers and that then seemed fabulous!” (17). Thus, Palacios prepares himself

to offer objective data in regards to the phenomenon and to describe some of the proposed and/or performed work done to attack the fire, highlighting that

the oil well of the Huasteca has cast during the period that lasted its combustion [...] a stream that bubbled in the center of the crater, all of it seized by liquid and flames having reached a diameter of 280 meters; this stream overflows in a cascade over the immediate swamp, producing, according to the more moderate calculations, no less than 100,000 barrels per day [thus turning the oil well into the] richest in the world, and the fire [into] the most terrible ever produced in nature (22, 23),

and afterwards, giving way to extrapolate, speculate and evaluate. What we can learn from the Dos Bocas event and that is revealed to the world, Palacios tells us, is

the existence of huge deposits of oil in the Huasteca, that open brighter horizons to our industries, were subsequently fed by a torrent of cheap fuel [sic] and gases, which set in motion the motors, the machines, the railways, the ships (30).

and thus, alluding to a process of industrialization of the country, in relation to what makes a plea to national character so that the Mexican landlords would be those that exploited their lands, pointing out the role that several agents would play: “the press will perform the patriotic work of telling the owners how valuable what they own is, and the government, with wise laws, will stop the pernicious influence of the monopolies” (33).

He ends these sections talking, among other things, about the diverse applications of the oil industry, of its dominance against other fuels, of the theories in vogue about the origin of the hydrocarbons and he prepares himself to close his account by appealing to an *Awakening of the Nationality*; that is the title of the last part of the text. In this he makes an exaltation about industrialism, considering it as the way to enhance the country, calling for an awakening of the private initiative and seeking to tie this goal with the program of the current government, that of General Porfirio Díaz, who

has led with unparalleled clairvoyance, slowly, but with imperturbable effort, the uniform action of its admirable policy [through] the promotion of communication, an essential auxiliary in this movement; the implementation of order; the arrangement of the Treasury [and] the contribution of capital, without whose help our aspirations would be powerless (39).

In the end, Palacio tells us, “we began to be suitable for the modern life” (39), for which, he warns us, “we need education [...] the effort, persistent and ingenious exercise, whose compelling action has never been an insurmountable obstacle” (40).

In summary, we thus found two ways of adaptation and significance of this catastrophic event, one aligned with the hegemonic spheres, in which we found several players that saw the event as a confirmation and justification of their ideas for national progress, nevertheless, at the end there will always be elements of exclusion of some sectors that will never be beneficiaries of this development, and another that will speak to us precisely about the effect of the present and future of these disadvantaged groups. In any case, the disaster constitutes a milestone, on one side, for those that saw the transformation of their lives confirmed by the virtue of the arrival of the oil industry to their regions and for their descendants, for whom the place is a permanent memory of the past, and on the other side, of those that visualized a breaking point for industrial development and economic progress that would mean the modernization of the country.

FINAL THOUGHTS

The stories that are told and that are constructed around the facts, provides them with value and meaning. This is particularly true when we talk about traumatic, catastrophic events such as the central topic of this paper. However, stories have a discursive function and according to Foucault (2007), talking about discourse is referring to patterns of institutionalized knowledge that are manifested in disciplinary structures that operate for the relation of this knowledge with power, a way of interaction contextually located. This is how we can interpret the type of discursive practices analyzed in the latter section, showing a dominant ideology that “controls the preferential content of the knowledge and the attitudes [and that] establishes the coherence (cognitive and social) among the different attitudes and goals” (Van Dijk, 2005: 184). Goals labeled in this case by an elite, conducive to a heroic vision of modernization that suppressed the part of reality associated with environmental degradation, poverty and health damage.

On the other side, Gray and Oliver (2012) explain to us what some academics have theorized about the opposition between “memory” and “history”. History would be understood here as the official recap, that is built with the cooperation of several agents connected with the elite in power, whereas memory is the fragile, vulnerable resource of the oppressed, of the excluded. Perhaps, in this way we could understand the versions reflected in this work about the Dos Bocas event. The problem may be that a traumatic event like this does not have, by its own character, the ability to be completely understood and adapted for historical understanding, but what cannot be denied are the lessons being raised from it. More than a century after the Dos Bocas event, we have to remember that true development must combine economic growth and social justice.

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