



# Flu pandemic, world power, and contemporary capitalism: building a historical–critical perspective

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## Abstract

**Objectives** To present a historical–critical analysis of the *configuration process* of the 2009–2010 flu pandemic in order to show the relationships between this *process* and the organization of world power, and to promote social and political mobilization.

**Methods** Primary and secondary sources on the dynamics of the 2009–2010 flu pandemic were studied. The sources were validated by plausibility assessment and historiographical analysis. From a historical–territorial and critical approach, the relations between the world *configuration* of the pandemic and the economic, political, and ideological power relations of contemporary capitalism were identified.

**Results** It is revealed that the expanding monopoly of the pig industry provided favorable conditions for the evolutionary explosion of the influenza A(H1N1) virus. The World Health Organization (WHO) made decisions that were inclined toward the economic interests of the pig and pharmaceutical industries within the framework of financial-cognitive capitalism.

**Conclusions** The modes of conduct of these institutions and companies materialized the world relations of economic, political, and ideological power of our time, which determined the *configuration process* of the pandemic. The worldwide spreading of the virus is barely a trail of the *process*.

**Keywords** Flu pandemic · Historical–critical perspective · Configuration process

## Introduction

In December 2008, in the middle of a confrontation between the inhabitants of the Cofre de Perote volcano valley and the transnational pig industry, Granjas Carroll de México (Carroll Farms of Mexico), a respiratory disease outbreak erupted in the town of La Gloria in the municipality of Perote, in Veracruz. The outbreak made 1600 of its 3000 inhabitants sick between February and March 2009, and inhabitants of the towns of Ixtacuitla, Huamantla, and Pañhe in the first days of March (Ávila 2009).

Given the explosiveness and severity of this outbreak of “swine flu,” as it began to be called, the inhabitants and those affected from the volcano valley, denounced under public opinion that unsanitary practices were being carried out at the facilities of Granjas Carroll de México that could be related to the origin of the flu: fecal and body wastes from pigs were being deposited in open-pit oxidation ponds, and thick clouds of flies were forming in them (Morales 2009; Díaz et al. 2009), such as those that serve as vectors for germs related to respiratory diseases (Otake et al. 2003).

The “swine flu” outbreak was followed by an “influenza pandemic”. This shook the spirits of humanity because only one of these pandemics had been declared before, and, in it, about 50 million people had died. However, in August 2010, when the WHO declared that the pandemic had ended, about 300,000 people died, less than those currently dying each year from seasonal influenza.

The question regarding the *configuration process* of the pandemic allows us to see that from the confrontation of

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December 2008, between the inhabitants and those affected from the volcano valley and the of the pig industry for their unsanitary practices and responsibility for the origin of the flu, an agreement was derived in April 2009, between the supranational health technocracy and the entrepreneurs of the pig and pharmaceutical industries on how to respond to a pandemic. In the confrontation and agreement, the modes of conduct of these institutions and companies, in relation to the market force dynamics of contemporary capitalism, which has been in financial crisis since 2008, materialized the world relations of economic, political, and ideological power, which determined the *configuration process* of the pandemic.

## Methods

The study of the *configuration process* of the 2009 flu pandemic was part of a comparative historical investigation at a doctoral level in public health (Henao-Kaffure 2018). A heuristic scheme of comparison of two flu pandemics—1918 and 2009—was used in the investigation. The scheme was designed with two attributes: one concerning the population and spatiotemporal dynamics of the pandemic, and the other concerning the changes of the systemic cycle of accumulation inside the mode of capitalist production (Arrighi 1999). The first attribute had two categories: disease and death, and path of expansion; and the second one, four categories: ideological power, economic power, political power, and military power, following Michel Mann's theory of sources of social power (1991). In turn, the categories had specific questions about the problems and the links occurring among them. Based on Norbert Elias's "human figurations" (Elias 1994 [1939]), the concept of *configuration process* refers to the fact that specific processes, such as those of the pandemics, are interwoven with world power relations which are historical-territorial and social (Hernández-Álvarez 2004).

In regard to the comparison, primary and secondary sources of the 2009 *configuration process* were analyzed. The primary sources consisted of official reports on the expansion of the pandemic, testimonies from some affected populations, and technical reports from national institutions and international organizations. The secondary sources consisted of epidemiological studies on pandemics in general and on the dynamics of the flu pandemic, specialized press and mass media, as well as studies on the dynamics of contemporary capitalism, from the ideological, economic, political, and military power relations.

Being a historical investigation, it was carried out by following the three main epistemological instruments of the discipline of history: historiography, critical review of sources, and interrelation of simultaneous temporal and

spatial processes (Bergquist 1989). For the primary sources, the plausibility of the time-place-person-content coherence and the text-context relationship were assessed. The secondary sources were validated by assessing author's approaches, the quality of sources, and the coherence with the explanatory interpretation. For the context analysis, secondary sources on the social, economic, political, and cultural conditions were reviewed, which is required by the historical analysis of a conjuncture structure, that includes the short duration, or time of the events, the medium duration, or juncture, and the long duration, or structure (Braudel 1970).

When contradictory information was found, the contrast between several sources on the same issue was studied, and its plausibility and relationship with explanatory processes from the political economy and the power networks under study were assessed. In order to have a process for double checking and to discuss different interpretations, the authors of the article took the following steps. First, the authors discussed interpretations of the sources. Second, the partial results of the investigation were presented to the research group Estudios sociohistóricos de la salud y la protección social (Socio-Historical Studies of Health and Social Protection) to which the authors belong, and in which professors, researchers, and undergraduate and graduate students from different disciplines, such as sociology, history, economics, and health sciences, participate. Third, the doctoral thesis of which the 2009 flu pandemic study was part, was evaluated by three academic peers, and the author received a laureate distinction.

Italics are used for categories and concepts belonging to the study, single quotation marks for those in common use, and double quotation marks for textual quotes.

## Results

The modes of conduct of the supranational health technocracy and the entrepreneurs of the pig and pharmaceutical industries when faced with the "swine flu" outbreak materialized the world relations of economic, political, and ideological power that determined the *configuration process* of the pandemic. Consequently, the narration of this *process* is presented in three subtitles: one for the modes of conduct of the supranational health technocracy, another for those of the entrepreneurs of the pig industry, and lastly, for those of the entrepreneurs of the pharmaceutical industry.

### Supranational health technocracy: virus hunting, permissive diplomacy, and administrative response

The first notifications from the health technocracy regarding the flu were issued between the second and third weeks of April and, quickly, in tune with the *germist* perspective, they dealt with the identification and characterization of the virus that would be indicated as being its “causal agent.” According to the Centers for Disease Control and Prevention (CDC), it was a new “type A(H1N1) swine influenza virus”; a realigned virus quadruple with gene segments originating in humans, birds, pigs from North America, and pigs from Eurasia, in a combination previously unrecognized, which had the ability to be transmitted between people (CDC 2009).

The characterization of the virus was compatible with the complaint from the inhabitants and those affected from the volcano valley about the unsanitary practices of the pig industry and their responsibility for the origin of the flu, but incompatible with the economic interests of that industry in the volcano valley. Thus, although the characterization revealed the industry’s responsibility, it also challenged it: if the virus, as the health technocracy had notified, had the capacity to be transmitted between people, there was no reason to think that it had originated in swine facilities (Redacción 2009). Afterward, the entrepreneurs of the pig industry urged the health technocracy to eliminate the qualification of “swine” that it had been using to refer to the flu since its inception and as the “causal agent” since its identification and characterization.

The pig industry’s demand paid off. On April 27, from the CDC a change was introduced in the characterization of the virus that brought forth information about the spatiotemporal origin of the sample from which it was isolated for the first time in California in April 2009, and removed information about its initial host (pigs from the pig industry). From “A(H1N1) swine influenza virus” (CDC 2009), the virus was renamed “A/California/04/2009(H1N1)” (Zhang and Chen 2009). Aligned with the new characterization, official communications began to rule out pigs from the pig industry as part of the cause, and take the qualifier “swine” into disuse. In lieu of a criterion of health interest, the health technocracy privileged a criterion of permissive diplomacy that safeguarded the economic interests of the pig industry. In October 2011, the WHO would standardize the name of the virus, in relation to its pandemic nature, as A(H1N1) pdm09.

With the “causal agent” identified and characterized, the health technocracy began its work. The Secretaría de Salud de México (Ministry of Health of Mexico) issued alerts in several states and in, the then, Federal District; and

the WHO began to centralize and present updated information and provide guidance regarding action, in two types of communications. In those of “updates,” the WHO concentrated on centralizing and presenting a daily count of laboratory-confirmed sick and dead by country, and on refining concepts and ways of referring to the disease; and in those of “guidance,” in identifying and announcing the pandemic alert phase changes, belatedly, according to what is stated in its preparation and response plan.

During 2 weeks of suspended activities in Mexico between April 21, when the identification and characterization of the “causal agent” allowed the WHO to begin daily and spatial monitoring of the sick and dead, and May 6, when activities began to resume, the flu spread from Mexico and the USA to Canada and Spain; and, since then, day by day, mainly in people aboard kerosene airplanes, to Israel, New Zealand, and the UK; Austria and Germany; Switzerland and the Netherlands; Denmark and the Hong Kong Special Administrative Region in China; Costa Rica, France, and the Republic of Korea; Ireland and Italy; Colombia, El Salvador, and Portugal; and Guatemala and Sweden (Henao-Kaffure 2018).

Until June 11, the flu spread from these 23 countries to 51 more countries. In tune with the *germist* perspective, the WHO had defined that an “influenza pandemic” took place when a human infection with a new influenza virus was transmitted efficiently between people and affected inhabitants of at least two of its administrative regions, and on June 11, belatedly, the WHO assigned the flu the status of “influenza pandemic”: of the 74 countries with cases, 30 were part of the European region, 27 from the region of the Americas, 9 from the Western Pacific region, 6 from the Eastern Mediterranean region, and 2 from the South-East Asian region (Henao-Kaffure 2018). Only the African region remained free, at least from the WHO.

By July, the WHO had already stopped presenting the minute, almost daily, spatiotemporal counts, and began presenting status updates less frequently and by way of administrative regions. Four months later, in November, the WHO stopped reporting the number of sick people, and only reported the death toll until August 2010, when the WHO declared that the pandemic had ended.

The WHO counts, about 600,000 sick people in November 2009 and 20,000 dead in August 2010, refer to an “epidemic” event as having lesser significance than a “pandemic” event, if some kind of criterion of “severity” is assumed in the definitions. More alarming data are undesirable, but, in light of the disease and death indicators of our time, it is clear that the WHO withdrew the criterion of “severity” from the pandemic concept, with which, administratively, guides the course of action of countries and regions.

After arguing the WHO had underreported the data, the CDC and other authorities produced new and less encouraging data 2 years after the pandemic. With a world population close to seven billion people (6,891,433,594), the number of respiratory deaths would have been 201,200 and the number of related cardiovascular deaths, 83,300 (Dawood et al. 2012). These new data, however, also do not refer to a “severe” pandemic event. Each year, 290,000–650,000 people die due to seasonal influenza (OMS 2018).

### **Pig industry: monopoly, exploitation, abuse, and the evolutionary explosion of the influenza virus**

In 1994, within the framework of the neoliberal policies that promoted economic globalization to overcome the overaccumulation crisis through territorial expansion (Harvey 2007), the North American Free Trade Agreement (NAFTA) entered into force and Granjas Carroll de México, having less environmental and labor concerns than those in the USA, began operations in the valley of the Cofre de Perote volcano (Díaz et al. 2009; Bacon 2012; Wallace 2016).

Between 1994 and 1999, Granjas Carroll de México belonged to Carroll’s Farm, a US company associated with Smithfield Foods, another US company, and Agroindustrias Unidos de México (United Agribusinesses of Mexico), a national private group with activities in the agri-food industry. In 1999, Carroll’s Farm was taken over by Smithfield Foods, the world’s largest producer and processor of pork. And in 2013, Smithfield Foods was taken over by a holding company in China: Shuanghui International Holdings Limited, currently known as WH Group (Chemnitz and Becheva 2014; Henao-Kaffure 2018).

In the fecal hells, which are the mega-facilities of the pig industry, the workers are so few that they can be counted on one hand, and with so many pigs, they seem more like things instead of animals. The workers of the pig industry are being exploited, and the pigs are being abused: they are only kept alive until the moment when stopping doing so generates value.

Smithfield Foods pigs alone produce 26 million tons of fecal waste each year, and their inadequate disposal generates contamination of water, subsoil, and agricultural land (Pérez-Espejo 2006; Kim et al. 2013), and entails the occurrence of gastrointestinal and respiratory diseases and the proliferation of flies and mosquitoes that act as mechanical vectors (Otake et al. 2003; Henao-Kaffure 2018).

Although the supranational health technocracy introduced changes in the characterization of the “causal agent” of the flu that freed the pig industry of its responsibility,

most researchers agree that the virus in relation to the pandemic arose from swine influenza viruses that started on a path of reassortments since the 1990s (Garten et al. 2009; Zhang and Chen 2009; Christman et al. 2011; Ducatez et al. 2011), when efficiency changes in animal husbandry began to be introduced (Wuethrich 2003; Gilchrist et al. 2006; GRAIN 2009; Wallace 2016). The virus would have emerged “from a reassortment of two swine influenza viruses [–the North American H1N2 and the Eurasian H1N1–,] each of which arose from [previous] reassortments [as well]” (Christman et al. 2011 p. 805). The profitable efficiency changes in animal husbandry included an increase in large farms, in herd sizes, and in vaccination practices, which led to an increase of the possibilities for pigs to be transformed into “vessels” for viral mixing. Since the 1930s, when the “classical” swine influenza virus was discovered (Shope 1931), and even before these changes were implemented, “only one influenza subtype had sickened North American pigs”. After these changes, “a quick succession of new flu viruses has been sweeping through North America’s 100 million pigs ever since” (Wuethrich 2003 p. 1502).

Thus, the fabric of monopoly, exploitation, and abuse that defines the pig industry today has its origin in the changes introduced at the end of the twentieth century to increase productivity, in accordance with the values of contemporary capitalism. And within this fabric, the pig industry favored, in Wuethrich’s words, an “evolutionary explosion” of the influenza virus (Wuethrich 2003), and optimal conditions for its transmission among people (Brown 2000).

### **Pharmaceutical industry: public relations and more business than science**

The national and supranational health technocracy dismissed the complaint of the inhabitants and those affected from the volcano valley about the unsanitary practices of the pig industry and their responsibility for the flu, and thus safeguarded the economic interests of the pig industry. In addition, it also safeguarded the economic interests of the pharmaceutical industry, which found one of its capitalist accumulation and expansion niches by way of the prevention and treatment of the flu.

Based on evidence provided by the pharmaceutical industry, with Roche and GlaxoSmithKline first in line, the WHO recommended the use of antiviral drugs and argued that these could “prevent severe illness and deaths, reduce the need for hospitalization, and reduce the duration of hospital stays” (WHO 2009).

Tamiflu, the brand name for Roche’s oseltamivir, a multinational Swiss pharmaceutical, previously belonged to Gilead Sciences, a US biopharmaceutical company that

patented it in 1996. It was in 1997, when the influenza A(H5N1) virus was identified and characterized as the “causal agent” of “bird flu,” when Donald Rumsfeld, newly appointed president of Gilead Sciences, sold, to Roche, the rights to manufacture and distribute Tamiflu until 2016, for 10% of sales (Alterini 2009).

When faced with the case reports of “bird flu,” the WHO issued two specifications: an initial plan of preparation for an “influenza pandemic” in 1999, to which it would make reforms in 2005 and 2009; and guidelines for the use of vaccines and antivirals in 2004 that would be updated in 2009 (WHO 2009). The plan was designed in collaboration with the European Scientific Working group on Influenza (ESWI), a group funded by Roche and other pharmaceutical multinationals to assist nations in their preparation for an “influenza pandemic”. The guidelines, in turn, were designed to guide nations toward the use of vaccines and antiviral drugs in an “influenza pandemic,” and the establishment of their reserves. While the WHO issued its specifications, Rumsfeld’s ‘revolving door’ led him from Gilead Sciences to the US Department of Defense (2001–2006), during the George Bush administration (2001–2009), which was at war against Afghanistan and Iraq.

In addition to issuing its specifications, the WHO presented, in September 2005, estimates that suggested that 7.4 million people in the world could die from a “bird flu” epidemic, and that 2 million of those could be from the US. In a formal response to these estimates, Bush allocated a budget of \$7.1 billion to detect outbreaks, create reserves of antiviral drugs and vaccines, improve the ability to produce new vaccines, and be prepared to respond to a pandemic. Nearly \$5 billion went to the pharmaceutical industry (Reuters 2005; Alterini 2009).

In 2009, when “bird flu” lost its presence at the expense of “swine flu,” but Roche continued to enforce Tamiflu’s manufacturing and distribution rights, the overestimation became apparent. Between 2003 and 2009, 272 people died of “bird flu”; 39 each year, and none in the USA (Alterini 2009).

The evidence provided by the entrepreneurs of the pharmaceutical industry to the WHO did not satisfy Cochrane which, together with the British Medical Journal, and the worldwide AllTrials campaign, demanded from the pharmaceutical industry the “raw data from the clinical trials of antivirals” and obtained and reviewed them in 2013. Contrary to what was put forward by the WHO, the review concluded that Tamiflu and Relenza, the brand name for zanamivir from GlaxoSmithKline, “had modest efficacy in relieving symptoms, with no impact on complications and deaths, with significant adverse effects, and without the ability to modify the transmission–contagion,” and “that the registration and development of clinical trials

[from the industry] was biased from the beginning, in the sense of emphasizing the sought results and devaluing opposing data and those referring to adverse effects” (Gervas 2014).

In 2013 and 2014, the British and European Parliaments pronounced themselves in favor of Cochrane and its allies, but the dispute over the veracity of the evidence “had no political or commercial correlative”. Tamiflu and Relenza sales increased up to 72 times during the “2009–2010 pandemic,” compared to 2002; the expiration date for antiviral drugs stored since 2005–2006 was extended; and, in some countries, “the Army continued to be involved in its conservation and processing” (Gervas 2014).

A systematic review of controlled clinical trials using oseltamivir (Tamiflu) and zanamivir (Relenza) published in 2014 concluded that “[o]seltamivir and zanamivir have small, non-specific effects on reducing the time to alleviation of influenza symptoms in adults, but not in asthmatic children”. In addition, the authors of the review, “identified problems in the design of many of the studies that... [were] included, which affects... [the authors] confidence in their results”. However, the authors report that “[o]seltamivir is classified by the World Health Organization as an essential medicine” (Jefferson et al. 2014, pp. 2–3).

In the dispute over the veracity of the evidence, it was achieved, however, that the WHO would propose, in 2014, to remove oseltamivir from the list of essential medicines in which it had been since 2009, and in 2017, it was removed, even though it was a year after Roche’s Tamiflu manufacturing and distribution rights sold by Rumsfeld expired.

For entrepreneurs in the pharmaceutical industry, humans, rather than congeners, are a group of individuals to whom they sell merchandise from birth to death, not always innocuously. The market forces of contemporary capitalism, which has been in financial crisis since 2008, led to this dispossession of life.

## Discussion

Two analytical perspectives of the 2008 crisis were relevant: liberal and sociohistorical (Katz 2010). Liberals, some more neoclassical and others more neo-Keynesian, had a voice in the media, and they explained the crisis as a problem in the financial sector that originated in speculative bubbles produced by individuals with excessive ambitions and without enough state regulation. Those representing the sociohistorical perspective, on the other hand, had a more surreptitious reception and explained the crisis, in the sense of critical political economy, as a long-

term multidimensional problem, in which various types of crises emerged in mixed form (Katz 2010).

The flu pandemic was configured amid world relations of economic, political, and ideological power that materialized in the modes of conduct of the supranational health technocracy and the entrepreneurs of the pig and pharmaceutical industries, first, in the confrontation over the unsanitary practices of the pig industry and its responsibility for the origin of the flu, and later, in the agreement on how to respond to the pandemic. The market forces of contemporary capitalism, which has been in economic crisis since 2008, mediated such materialization. In this sense, the understanding of the 2009 flu pandemic as a *configuration process* proves to be similar to the socio-historical perspective of the crisis and averse to the liberal perspective.

In sociohistorical perspective, the 2008 crisis manifests itself in three dimensions. In the conjunctural dimension, it manifests itself with capital accumulation, overproduction of merchandise, and disproportionate exchanges; in the structural dimension, with imbalances in the sphere of demand and the behavior of the rate of profit; and in the historical dimension, with the civilizational threat of environmental degradation (Katz 2010).

In the conjunctural and structural dimensions of the crisis, the *configuration process* of the 2009 flu pandemic is related, on the one hand, to the way intensive agribusiness production is organized, in this case, swine, which generates the conditions for mutation, reassortment, and transmission of influenza viruses; and, on the other, to the deterioration of the conditions of the reproduction of life, generated by exploitation, abuse, and environmental damage (Barreda 2009). Within these dimensions, with the aim to reduce infections in production and prevent or cope with pandemics in deteriorated conditions of the reproduction of life that this generates, the health technocracy and the entrepreneurs of the pig industry promote the use of chemical substances, as antiviral drugs and vaccines; and the entrepreneurs of pharmaceutical industry, posing as altruist while expanding its accumulation niche, continues to provide the substances. This dynamic is covered by two interconnected issues. On the one hand, there is the fact that the predominant perspective in the explanation of pandemics assumes that the virus is at the same time the cause and the disease, while ignoring the causal relations with the organization of the industry. From this perspective, the route of intervention with antiviral drugs and vaccines is expedite (Girard et al. 2010; Monto et al. 2011). On the other hand, there is the fact that, in the framework of so-called “cognitive capitalism”, the intellectual property rights have been put forth allowing the pharmaceutical industry to legally increase its profits (Zukerfeld 2008).

According to Arrighi’s historical explanation of the capitalist mode of production, systemic cycles of accumulation have been constituted by a material expansion phase and a subsequent financial expansion phase, and the decline of the financial expansion phase of the cycle in progress has been accompanied by a material expansion phase of what would be the next cycle (Arrighi 1999). So, in the historical dimension, the *configuration process* of the 2009 flu pandemic is related to processes of longer duration and scale, that account for a decline in the financial expansion phase of the systemic accumulation cycle led by the USA and, consequently, of a decline in its position of power.

Thus, from a critical historical–territorial perspective, the study of the 2009–2010 flu pandemic, other pandemics and, in general, the problems of public health, as *configuration processes*, allow us to understand the networks of the world power relations that determine these *processes* and to understand the real possibilities of transforming them.

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## Compliance with ethical standards

**Conflict of interest** The authors declare that they have no conflict of interest.

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