FROM ANTIBIOTIC RESISTANCE CRISIS TO THE "ONE HEALTH APPROACH": A COMMON INTERNATIONAL RESOLUTION IN RESPONSE TO THE FOOD RISKS GLOBALIZATION (A CROSS-COUNTRIES COMPARISON OF INSTITUTIONAL AND POLITICAL DISCOURSES - FRANCE AND UNITED STATES)

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Abstract

Result of a PhD research in progress, regarding the evolution of food risks representations, this article focuses on the way through which new concepts emerge as resolutions on the latest international food and health crisis. The research is based on a discourse analysis approach, through the international health organisations and political discourses. The concept on which this paper focuses on is represented by the "One Health approach" as an international resolution in order to reduce and control the impact of the antibiotic resistance emerging crisis and its consequences on the food risks representations.

Key words: *One Health*, *antibiotic resistance*, *food risks*, *institutional and political discourse*

1. INTRODUCTION

Since the late eighties, the increasing number of health and food crises, and their global spread has led to an investment of a plurality of actors in their handling and control. The bigger the crisis and its spread, the larger the number of parties involved. In their research for resolutions, the national/international mobilisation of political actors and the health and food experts (depending on the largeness of the crisis and on its impact) has showed a major role in the process of the new concepts appearance and development (or redefinition of the existent ones), concepts meant to deliver solutions. The cases of the infected blood affair, the dioxin crisis, the mad cow disease, or the Avian Influenza crisis, are just a few examples that have demonstrated the need of an international political leadership. For instance, the dioxin crisis management led to the appearance of new concepts and politics such as "food traceability" (Bonnin 2004). Likewise, the infected blood affair during the '90 has led to the emergence of a new concept on the French territory – "the sanitary safety" (Bruegel & Stanziani 2004) - related to the health domain. Over the years, and more specifically in the context of the mad cow crisis, the actors responsible for the food safety have redefined the concept due to its uses related to the food control area. As a result new institutions have been created (AFSSA in 1999 – the French institution in charge of the food safety, as well as its European homologous EFSA – The European Food Safety Authority - in 2002).

Another important aspect of these crises is related to their impact on the evolution of the consumers' representations of what the concept of "food risk" implies. If, for example, in the context of world wars the concept of "food risks" was synonymous of lack of food, nowadays we talk about globalization of food risks and the range of terms associated with this concept is much wider: GMOs, zoonosis, pesticides, listeriosis, salmonella. These mainly refer to the risk of contaminating populations by various pathologies through the food chain. So, if after the Second World War, the concept of "food risk" was defined in quantitative terms, from the 80s, starting with the process of livestock industrialization and the MGO (modified genetic organisms) culture, the qualitative dimension of food (in terms of the effects on human health) had a major role on the food risks representations evolution. Certainly, these aspects are not new, as the long episodes of the beef crisis of the eighteenth and nineteenth centuries have demonstrated their impact on the normative controle and management of food risks (in the sense of the quality of the food and food safety). Likewise, in this qualitative sense of the concept of "food risks", the impact of the "mad cow crisis" has been significant by the panic created among the consumers. Similarly to the infected blood episode

management, during the mad cow crisis, the precautionary principle (originally introduced in the environmental area) was transposed in the food sector, engendering a redefinition of the “food risks” concept and its representations.

From then and until today, several health and food crises and outbreaks have emerged, each time adding new dimensions to the concept of "food risks", and leading to the appearance of new concepts and categories of the social world, such as “sustainable development”, “sustainable agriculture”, “organic food”, or new social movements and consumers’ behaviours (vegetarian movement, movement anti-meat). This paper focuses on the impact of the latest health crisis, the antibiotic resistance, on the evolution of the “food risks” representations and the redefinition of a new concept, the “One Health” approach, that underlines the need of collaborations between various fields such as the human and the animal health, the environment and the food production sector, in order to provide solutions. As we will see furthermore in the third part of this paper, this vision is not new and it has a long history. But in order to understand the evolution of this concept and its association with the food risks representations, a few clarifications are required on the background of the antibiotic resistance crisis.

2. THE ANTIBIOTIC RESISTANCE PROBLEM

During the last decade, the development of bacterial resistance to the antibiotics has been a central subject of debates among a plurality of health, political and professional actors. Complex natural phenomenon associated with the widespread use of antibiotics in human and veterinary medicine (Sanders 2005), the antibiotic resistance represents the ability of bacteria to adapt and no longer be be susceptible to the effects of antibiotics (Levy 1992, 90). Directly concerned, as in many countries the percentage of the antibiotics consumption in veterinary medicine, livestock included, exceeds the percentage of human medicine antibiotics consumption, (WHO 2014, 59), the agricultural profession (here we understand the farmers and agricultural unions) is at the core of the antibiotic resistance problem, and it has been the subject of various antibiotic consumption policies in the recent years.

In fact, the use of the antibiotics as growth promoters in animal-food producing industry dates since the ‘50s in the United States and Europe (Bories & Louisot 1998). The problem that comes within is the fact that the more an antibiotic is used the higher the risk is that the bacteria become immune to its effects. In addition, the resistance forms developed by the bacteria are transmissible between human and animals, firstly at the environmental level, secondly by the food supply chain. Over the years, legislative procedures (more or less successful) have been set up and implemented, at national and international levels, in order to reduce or ban the antibiotic use as feed additives in animal producing industry. For instance, if in Europe this practice is banned since 2006 (European Parliament 2003), in the United States, there is no legal procedure to ban it, leaving it at the farmers’ good will (Food and Drug Administration 2015). In addition to this, preventive and curative veterinary use of antibiotics in animal husbandry industry is another factor that participated at the increasing rate of antibiotics consumption (for example, 80% of the totality of the antibiotics used in the United States goes to the animal health – according to the Food and Drug Administration rapport published in 2015).

Today, on the international scene, the health agencies recognize that antibiotic resistance represents " one of the greatest challenges to global public health today" (WHO 2015, 8). However, the national approaches of the problem differ from one country to another, depending on the different social, political, economical contexts. If for instance, on important aspect considered by the European countries and Union concerns the data quantification and monitoring of resistant bacteria (European Centre for Disease Prevention and Control, European Medicines Agency 2009), the American approach (White House 2015) focuses on the investment in scientific research for new antibiotics. Nevertheless, this is not a random aspect of the problem as what needs to be considered is the normative and legislative aspect of antibiotics use in veterinary medicine. As already mentioned, in Europe, the use of antibiotics in veterinary medicine as feed additives (growth promoters) is currently prohibited (legislation came into force on 1 January 2006 - European Parliament 2003), the United

States, this practice is still the subject of initiatives that appeal to the will of farmers (Food and Drug Administration, 2015).

However, during the recent years, a common approach – called the "One Health" approach - began to emerge among the discourses of the international actors in charge of human and animal health. The concept is not new, as we will see in the next chapter of this paper. Nonetheless, one important aspect of this common approach interests us through its impact on the evolution of food risks representations and vice versa. That is, the emergence of new categories and concepts of the social world due to the knowledge circulation between various areas of activity.

In a theoretical perspective, an important aspect that needs to be mentioned is the fact that the antibiotic resistance issue find itself in a difficult process of becoming into what the human and social sciences call a public problem (Dewey 1927, Cefaï 1996, Gilbert & Henry 2012). As the recent researches on the subject point out (Arquembourg 2016, Badau 2016), the extremely large fragmentation of the antibiotic resistance problem, under the impact of political, economic, legislative and professional aspects, shows an intermittent and segmented process of publicizing the problem in the public space. The importance of the "One Health" concept emergence is the fact that it represents an approach trying to unify all the fragments of the antibiotic resistance problem in order to find a common solution. The premise of this paper is that the "One Health" concept finds itself in the process of becoming a common international resolution in response to the food risks globalization in the context of the antibiotic resistance crisis, through the political and institutional actors takeover and redefinition of the concept. As Joseph Gusfield's research showed (Gusfield 1981), the public problems constitution process is a process that falls within a triple dimension: a work of appropriation of the problem (featuring actors claiming legitimacy to define and name the problem), a work of causal inference (determining the fact or the causative agent of the problem) and a working political accountability (designating the responsible actors to act and solve the problem). Hence, the problematization process is inseparable from a publicizing process, showing various political and institutional groups more or less institutionalized disputing the property, the causality and responsibility of a public problem. In the specific case of the antibiotic resistance problem, the ownership of the "One Health" concept by the international health institutions and political actors participates at the antibiotic resistance problem publicizing process.

3. THE "ONE HEALTH" CONCEPT

The "One Health" concept finds its roots in the old formula "One Medicine" coined by Calvin Schwabe (1927-2006), a veterinary epidemiologist. His claims, when introducing the concept, appealed for a unified approach between human and animal medicine in order to fight zoonosis (diseases transmissible between humans and animals). Prior to this, a German physician and veterinary, Rudolf Virchow, during the 19th century in order to name the infectious diseases that is passed between humans and animals, coined the zoonosis term. An important moment of the "One Health" concept history goes back to 2004 when the environmental non-governmental organisation, Wildlife Conservation Society, organised an international conference in New York on the theme "Building Interdisciplinary Bridges to Health in a Globalized World". The purpose of the conference was to bring together human and animal health experts and led to the creation of « The Manhattan Principles ». « The Manhattan Principles » represents in fact a list of twelve recommendations calling for an holistic and approach to prevent, fight and control the epidemic diseases in order to maintain the integrity of the world's ecosystem. In 2007, collaborations between Roger Mahr (President of the American Veterinary Medical Association - AVMA) Ronald Davis (president of the American Medical Association - AMA) started in the context of the need of an integrated approach between human and animal health. In November, AVMA created "One Health Initiative Task Force" whose final report on the "One Health" concept was published in 2010. The team, including representatives of the AMA and APHA (The American Association of Public Health) led to the creation of the One Health Commission in 2009. But, as Aline Leboeuf works showed (Leboeuf 2011), this represents the research aspect of the concept.

The aspect that interests us here is the political take over of the concept and its redefinition. In 2008, in the context of the Avian and Pandemic Influenza crisis, an international ministerial conference was held and a common strategic framework was officially released in order to fight and to control the crisis as well as the infectious diseases that circulate between humans, animals and ecosystems. The document was signed by the human and animal health international leaders, Food and Agriculture Organization of the United Nations (FAO), the World Health Organization (WHO), the World Organisation for Animal Health (OIE), as well as by the United Nations Children's Fund (UNICEF), the World Bank, and the United Nations System Influenza Coordination (UNSIC). Borrowing the American Veterinary Medical Association definition of the concept, the "One Health" approach was described as "the collaborative efforts of multiple disciplines working locally, nationally and globally to attain optimal health for people, animals and our environment." (American Veterinary Medical Association 2008, 13).

In 2010, the human and animal health international leaders (FAO, OIE, WHO 2010) published "The Tripartite Concept Note", a strategic framework affirming the need for an international collaboration to control health risks. The importance of this document comes within the new reformulation of the "One Health" concept by adding the food sector, as a crucial element of these collaborations:

"A world capable of preventing, detecting, containing, eliminating, and responding to animal and public health risks attributable to zoonosis and animal diseases with an impact on food security through multi-sectorial cooperation and strong partnerships." (FAO, OIE, WHO 2010, 2)

We underline the introduction of the "food security" aspect in the redefinition of the "One Health" concept by the international health organisations as it represents a key moment of the process through which the concepts emerge and evolve in order to respond to the food risks representations evolution and more largely to the world's transformation.

4. TOWARDS A COMMON INTERNATIONAL APPROACH

To resume what has been stated so far, we can acknowledge that the concept that initially started as a veterinary research initiative in the health area has seen itself transformed in an international approach uniting several areas such as human and animal health, environment and food. This transformation began due to the appropriation and the ownership of the concept by the international political actors and the non-governmental organisations, in order to find solutions to the latest health and food crisis, and more largely to the health and food risks globalisation. Although in theory a great part of the actors involved agree on the necessity of common efforts and collaborations in order to prevent, control and manage health and food crisis, zoonosis and infectious diseases, in practice, the emergence and the implementation of the concept reveals a slow difficult process. Likewise, the media coverage of the subject is very insubstantial, especially when it comes to national general press.

In the latest part of this paper we are going to present an analyse of the French and the American political and institutional discourses concerning the emergence of the "One Health" approach as a common international resolution to the antibiotic resistance crisis.

4.1. Institutional and political discourses in France

In the recent years, the antibiotic resistance problem has become one of the main concerns of the French health institutions, as the establishment and the implementation of National Plans, both in human and animal health underline (Ministry of Labour, Employment and Health 2001, 2007, 2011 & Ministry of Agriculture, Food and Forestry 2012). However, the emergence of the "One Health" approach is more recent. The first official document dates since 2011 (French Ministry of Foreign and European Affairs 2011) and defines the "One Health" approach as a challenge that needs to take into consideration four main aspects: the public international health area, the economic and food security areas, the environmental area as well as the social area. The latest French rapport on the antibiotic resistance problem and the "saving of the antibiotics" underline the necessity of a "One Health"

approach in order to find solutions (Carlet 2015). In the same direction, the Health Ministry discourse, Marisol Touraine, (Health Ministry 2015) sustains and encourages the necessary of an "One Health" approach in order to find solutions to fight and control the antibiotic resistance problem. The common seminars organised in the last three years by the Health Ministry and the Agriculture Ministry (and later on, the Environment Ministry), they all show an acknowledgement by the main actors of the necessity to implement a "One Health" approach in fighting the antibiotic resistance problem. However, so far the emergence of the "One Health" concept as a solution to the antibiotic resistance crisis remains a concept developed in theory. Beside a few combined research teams (of human medicines and veterinaries) working locally, no concrete actions have been yet implemented on the French territory.

4.2. Institutional and political discourses in United States of America

On the other side of the ocean, the antibiotic resistance issue has proved a different configuration along the years. On of the main differences regards the involvement of many national and local consumers' protection or health non-governmental organisations, claiming the banning of antibiotics use as additives in farming and livestock, the rational use of the antibiotics, as well as the new investments into research for new antibiotics. From organisations as *Pew Trusts* to *Natural Resources Defence Council* or *Wildlife Conservation Society*, we can observe a variety of public demands to find solutions and to adopt a "One Health" approach in fighting the antibiotic resistance problem. The importance of the public participation in the problem goes without saying as political actions have been implemented since 2015. Thereby, the implementation of the "The National Action Plan for Combating Antibiotic-Resistant Bacteria" in 2015 (White House 2015), evidence concrete actions to be taken into a "One Health" approach as its main goals underlines actions to: "strengthen national One-Health surveillance efforts to combat resistance" or to "improve international collaboration and capacities for antibiotic-resistance prevention, surveillance, control, and antibiotic research and development" (White House 2015, 2).

5. CONCLUSIONS

To resume, the aim of this paper was to analyse the processes through which new concepts and categorisations of the world emerge in order to respond to the food risks representations evolution in the context of globalization of food and health crises. More specifically, we tried to understand and provide an insight on how the expansion of the antibiotic resistance problem and its impact on the food area has led to the emergence of a common international resolution. As we saw, the takeover of the "One Health" concept by the international health organisations and political actors has led to its redefinition into an international common approach to fight infectious diseases, health and food crisis and to control their economical and social impact. Originally coined by a veterinary, the concept claimed the necessity of unifying human and animal medicine research in order to fight and control zoonosis (diseases transmissible between human and animals). The takeover of the concept by the non-governmental organisations led to taking into consideration the environmental field. Afterwards, the ownership of the concept by the international health organisations (FAO, OIE, WHO) and the international political actors (World Bank) led to adding the food safety area, as well as the economic area, as crucial aspects to be considerate in order to fight and control world's health and food crisis.

In the current context of the antibiotic resistance problem we saw that, firstly, the "One Health" approach is being supported and encouraged by the international health institutions, and secondly, at national levels, political and institutional discourses are in favour of a "One Health" approach. When it comes to practice, this approach finds itself at the begging of a road that appears to be at least tremendous. Nevertheless, an important aspect that is worth pointing out is the fact that the "One Health" approach allows to unify the plurality of fragments and segments that constitute the antibiotic resistance problem (from human and animal medicine to environment, from food safety area to its financial and economical aspect and last but not least, to its social impact) and to provide the fundament of what could be a common international resolution. In other words, the ownership of the

concept by the international health and political leaders is contributory to the antibiotic resistance process of becoming a public problem (Gusfield 1981) and participates at its publicising process.

It remains regrettable the lack of media discourses on the topic, lack that shows the necessity of efforts to communicate around the concept.

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