

SCIENCE AND EMPIRE: THE GEO-EPISTEMIC LOCATION OF KNOWLEDGE

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Summary

The chapter discusses the relation between the notion of science and Empire. It also considers the historiographical evolution of both concepts and explores some connections with the situation in Latin America as a 'leading case'. It also explores the relation between the Western culture as an imperial domain and its consequences. A variety of 'modernity' definitions are also explored and related to the development of science and knowledge. Science, knowledge and the idea of imperial design are discussed as fundamental to the determination of colonies and colonialism.

1. A Historiographical Construction

Different interpretations presuppose a common and shared principle of knowledge and of the rules of the game, while different perspectives presuppose that the principles of knowledges and the rules of the game are geo-historically located in the structure of power of the modern colonial world. To show how this works, we need something such as 'dependency theory' for the epistemological domain.

Walter D. Mignolo

The Idea of Latin America

The study of Empires is not a recent academic subject, what is more recent are the studies of Empires in relation with the transmission of knowledge or, more specifically, in relation with the imposition/introduction of a particular notion of *science*. The studies of the notion of Empire (conceptual issue) goes entangled with the consideration of the beginning of the period of the Great Expeditions when Spain was still a relevant, even if decadent, Empire in the Western World (historiographical issue). The Malaspina expedition of 1789-1794 is probably the best late example. Even more contemporary is the development of science and Empire as a subject within the University environment, event which responds to the post-colonial historical revisions produced after the Second World War. What is important to consider here is the fact that the argument of science and Empire as such (conceptual dimension) cannot be separated from the historiographical context in which it emerged (historiographical dimension). Moreover, the expansion of University's populations and the diffusion of University's works and analysis that are connected with the establishment of English as the *lingua franca*, can be considered as an ultimate period of the scientific domination of the world through the establishment of standards and parameters of writing.

The consideration and analysis of the relation between science and Empire as a *historiographical phenomenon* mostly refer to the British Empire as to the British-based publications that first introduced the argument extensively, even when, as we know, Spain and Portugal were by far the most extended in historical terms, and the most expanded in territorial terms, of the Empires. Although, chronologically speaking, the study of the Spanish Empire and domains should lead the study of 'colonial science', the case has been rather the opposite, and it was the development of the studies about the British Empire that have established the historiographical ground for the analysis of the relation between 'science and Empire', or, in the best of the cases, was the development generated by Anglo-Saxon authors that referred to other Empires different from the British. Cañizares-Esquerro argues that the studies about the Spanish Empire refer mostly to the XVIth and the XVIIIth centuries, marginalizing the remaining periods, the XIXth and XXth centuries included. In fact, the most comprehensive works in the last 50 years with regard to the relation between science and Empire are found within 'Anglo-Saxon' publications. I am referring for example to Roy MacLeod's *Nature and Empire: Science and the Colonial Enterprise* published by *Osiris* in 2000 and to Londa Schiebinger's edited section of the Journal *Isis* under the title of 'Colonial Science' in 2005.

Another interesting aspect concerns the incorporation of analysis and writings connected with the relation between science and Empire within the Spaniard domain, actually performed inside the historiographical context set up by Anglo-Saxon analysts and academics. Our hypothesis is that this happens due to the fact that we cannot separate the idea of science and Empire from the academic context in which it has been developed since 1850. The construction of the notion of 'British Empire' giving its historically-orientated nature led to the establishment of the relation between science and Empire. The notion of a certain 'Imperial Science' was for example already present in the pages of journals like *Nature* in the decade of 1890. An earlier analysis was also provided, with regard to the Spanish Empire during the XVIIth and the XVIIIth

centuries, but this was nothing comparable with the amount of bibliography produced by Anglo-Saxon authors during the XXth century. These earlier British works were historically-orientated and did not have the *critical* approach with which we associate the subject nowadays. Focusing less on establishing how the Empire was imposing an idea and/or practice of science, the earlier works were concerned with the construction and expansion of ideas and their development within the colonies. Yet, more importantly, (i) the philosophical notion of naturalism, (ii) the idea of experiment and (iii) the notion of modernity expressed in terms of scientific progress made it then almost impossible for the scientific practitioner to construct any sociological theory of science in the *critical* sense in which we understand it nowadays. The works of Andrés Galera Gómez and Juan Pimentel with regard to Malaspina's expedition as well as those from authors such as Charles Darwin (1809-1882) and Alexander von Humboldt (1769-1859) relating to South America are seminal examples in this respect.

Despite all the differences and changes of the various approaches, as we just briefly indicated above, an *argumentative line* can be constructed between the civil servants and the first scientific practitioners who approached the notion of scientific diffusion using the imperial structure and the present Anglo-Saxon University's system which considers the *subject* of science and Empire under the more contemporary light of 'Science Studies' or 'Technological Studies'. To summarize: the argument of science and Empire in its present form is a result of the expansion and development of the Anglo-Saxon University system and publishing market. This situation is confirmed by specialists like Roy Macleod who situates the beginning of the studies of the relation between science and Empire—as 'area study'—in the XXth century during the 60s and 70s. The fact that during the years of German-based development of certain sciences—from the XVIIIth to the XXth centuries—this notion of Empire only arose in political terms and not in *scientific* terms can be considered as a probe of the previous argument. Moreover, in terms of science and *techniques* Western culture was considered for a great part of the XIXth century in terms of *civilization*. It is only during the XXth century that, from a philosophical or scientific point of view, the notion of Western culture has been presented in relation to different Empires. Even for authors like Immanuel Kant (1724-1804) the association between 'science' and knowledge was less justified in a particular context of cultural progresses—a Eurocentric view—than in the idea of *connaissance de la nature*. In fact, it was precisely from this notion of *civilization* that the idea of something called 'Western culture' was created. The classical work of Oswald Spengler *The Decline of the West* can be understood in this sense. The fact that all the de-colonization period—from the political/institutional point of view—was formally over only at the end of the 60s in the XXth century, is indeed also a further factor that explains why it was only then that the first studies about a sort of 'colonial/imperial science' emerged. The already classical and widely quoted work of George Basalla 'The Spread of Western Science' is indeed a perfect example. We can also mention the works of K. Mendelssohn and A. Alam.

It is interesting to see how a historiographical account regarding the relation between science and the British Empire can be considered as a modeling account for the relation between Empire and science as such. This is less connected with a particular author's claim than with the fact that the English language functions as *lingua franca* and that Anglo-Saxon universities are considered as the *natural* location for Western

contemporary knowledge. Therefore, either because the subject refers specifically to the British Empire or because the author deploys an approach within the environment of Anglo-Saxon Universities, the result is always this *performative* condition of the British Empire. Mark Harrison's article 'Science and the British Empire' is probably one of the best actual examples whereby the specific claims from the article are superseded by the historiographical context in which it is situated. This is indeed very pertinent with respect to the argument of 'science and Empire' as it always works in this way: the descriptive level of commentary and analysis does not match the epistemological grounds upon which it is located.

It is not only the facts and arguments considered under the notion of 'British Empire' that make the above mentioned approach *performative*, it is also the way in which it is deployed. The fact that the British Empire was widely extended across the planet, making it an unquestionable model for imperial analysis, cannot be separated from the fact that its analysis is referred to an Anglo-Saxon academic and scientific community and to a vast bibliography that is published in English and mostly by British and American publishers. Again, Harrison's article remains a good example: in this respect, the assumed fact that in England 'the unfolding of empire coincided with the scientific revolution' is not a minor aspect either. This situation allows us to understand why many authors associate the development of science with the progress of the 'civilizing mission'.

The argument of science and Empire as such is not only a *historiographical creation*, but it is also something that in terms of knowledge cannot be separated from the *location* imposed by the consequences set by imperialism itself. If in these conditions of knowledge, it is paradoxically almost impossible to conceive 'modernity' without colonialism, equally, 'science' in its modern meaning is always 'colonial science' — because it involves a centre/peripheral relation, it assumes a notion of diffusion and progression, and, most importantly, because it implicitly deploys a methodological approach that is coherent with the creation and development of an Imperial State. Of course, this introduces more of a conceptual and epistemological problem and less a political or ideological issue in the sense popularized by Toni Negri and Michael Hart in their best-selling book *Empire*. However, contrary to what some authors might think, the fact that science, associated in Europe with the idea of knowledge since Kant's writings, always works in colonial/Imperial terms does not facilitate the identification of a particular 'matrix' or scheme of analysis. The relation between science and Empire remains very complex and generalizations are difficult to be sustained.

In the same way as 'modernity' is not the *historical evolution* ('superación histórica') of colonialism, on the contrary, it is its consequence, similarly, the imposition of a paradigm of knowledge —Universities, vehicular language, etc.— is not only a way to better understand the relation between science and Empire but also to reproduce it. The relation between science and Empire is less about historical consideration or information than it is about the way in which through historiographical narrations not only do we construct the past but we also establish a conceptual system to explain it. It is interesting to note how, as the argument of colonial/imperial science became more complex and varied, the community of academic and University's authors that deal with the subject became more galvanized and standardized. Following for example Slavoj

Zizek's (1949-) ideas and perspectives about contemporary culture, this reverse situation/condition can also be considered as the relation between what is 'real' and what is 'symbolic' within the present capitalist environment: the more symbolic our understanding becomes, the greater the demand we have to establish a notion of 'real' in relation to it. This situation/condition can also be understood in light of the paradoxes exposed by Jean-François Lyotard (1924-1998) in *Le differend* in order to characterize our present sense of thinking. For Lyotard the notion of 'modernity' needs to be interpreted less as a set of clear and established rules and more as a result of non resolved issues, interpretation that sees the thought of modernity—or the 'Modern Thought'—as a continuation of the notion of knowledge introduced by the Empires since the XV century.

2. Empire and Geo-epistemology

More than a concept, Empire(s) is a notion whose study and definition cannot be separated from the historical consideration of its evolution and, therefore, from the historiographical development of the notion itself (i) as a historical category, (ii) as a political system or (iii) as a form of domination. Whatever the aspect that would be analyzed in relation with this notion of Empire(s), this particular condition of evolution and historiographical development must be taken into account, firstly as a historical category (temporal concept, historicity), secondly, as a political structure or administration, and, finally, as a socio-cultural form of domination. On the contrary, from a historiographical perspective, Empire re-defines the past as a form of domination that can be interpreted, according to the periods, as a political system or more specifically as an historical category. However, following these three above indicated instances, the notion of Empire(s) has been analyzed and argued, that is, following a practical use and implementation, in which three perspectives can be considered: (i) as a political argument and/or system, (ii) as an ideological dimension, (iii) and as a technological/scientific point of view.

As a political argument, the idea of Empire has been analyzed as a product of the State, Government or Nation-orientated administration. This is the classic approach to Empire when it is considered within a historical context and, as a consequence, as part of a particular State-orientated strategy. It is mostly in this sense that authors refer to the 'Roman Empire', 'Spanish Empire', etc. From this perspective, Empire can appear as the main institution that allows a panoramic view of the State, the administration, etc., thus, that is comprehensive of almost every domain—extreme versions of these perspectives, conceived the idea of Empire as the ultimate political *logos*. However, Empire can also be understood here, in a more specific way, as the political system itself.

Conceived as a product of a particular paradigm, the Empire is connected with a system of beliefs and/or a set of values that are implemented at social level. The most common way of describing this conception is the ideological approach, that is, the idea that there is a set of *values* that are coherent, conform a sort of *scheme*, and can be identified through the *analysis of social actors*. This approach has dominated the idea of Empire for the whole of the XXth century, especially with those authors for whom the analysis of history or society was a manifestation of their political beliefs. The notorious

principle of *politique d'engagement* has its roots in this approach as it does the development of the notion of *imperialism*. Since the beginning of the XXth century the evolution of the notion of Empire, in terms of ideology, has followed a sort of *escape to the invisibility*: rather than grounding the affectivity and efficacy of the Empire in monuments or in wars for possession of the land, the Empire has been transformed into imperialism, and its roots have been transformed in more subtle forms of domination.

However, a more recent approach, somehow derived from the previous ideological perspective, conceives Empire less as a political or physical entity and more as connected to non-visible elements, that is, in relation with scientific and technological elements. The most powerful of these perspectives developed at the end of the XXth century, seems to consider science and technology as *devices* of imperialism. In short: the combination between science and technology, and its use and development, together within an invisible sense of reality, have generated in peripheral communities or societies, according to these authors, a reproduction of imperial structures of organizing space, understanding it and 'naming' it. This perspective, in a strict sense, is the factor that generates the increasing analysis of the relation between science and imperialism and, even more, is the perspective that established it as a *subject*.

Finally, there is a last argument that has been developed recently and which considers Empire as a *substitute notion*, that is, a notion that is relevant only if placed in its geo-epistemological context. This approach tries to establish a link between spatial location ('geography' = physical and imaginary) and conceptual evolution ('knowledge'), and to see how each particular location develops a specific way of conceiving knowledge and therefore a sort of 'independent epistemology' in which every language—and conceptual domain—is grounded. It is in light of this later approach that we would like to propose an exploration of the relation between science and Empire.

With the historical approach we face the limits of a factual and chronological outdated analysis. With the ideological approach we have the problem of the universal conceptions applicable to every single case and also the idea of regularities, that is, that there are cycles and periods that are recurrent. With the 'scientific' approach we affront the question of knowledge and of who defines it and how it is defined. With the geo-epistemic approach there is a double attempt: (i) to try to overcome the limitations of the previous interpretations of Empire and (ii) to try to construct a more accurate epistemological dimension, while making it more entangled with a local space rather than with a global-imperial conception.

Given these indicated conditions and characteristics, the analysis of the relation between an idea of science and a notion of Empire becomes equivalent to the analysis of the development and evolution of these three instances of the notion of Empire. Why? Because the idea of science as a 'modern' entity cannot be separated from the establishment of the political system that created the European States—within the XIXth century—in its present shape. There is a direct conceptual link in between conceiving a notion of 'modernity', defining the role of the State (Imperialism, colonialism) and establishing an idea of science as a *natural* knowledge (see Section 6).

This is relevant because, in the same way that the idea of Empire (and imperialism) cannot be considered separately from the notion of modern State and the meaning of modernity, equally, the modern idea of science (and scientificism) cannot be separated from the University system established in Europe in the XIXth century—and later in US during the XXth century—and, also, from the hierarchical bureaucracies deriving from the evolution of the modern State, and from the development and generalization of the market as a public domain. It is almost impossible nowadays to think in terms of science without considering this entanglement and, therefore, assuming that the conceptual evolution of the idea of Empire(s) goes together with the conceptual evolution of the notion of modern science.

3. The Evolution of the Ideas

3.1 The Historiographical Foundation of Empires

The relation between science and Empire from the perspectives discussed before can also be described in an evolving development process—not always chronologically organized—following five main periods: (i) *Historical period*. The relation between science and Empire is grounded on historical events, periods or schemes; (ii) *'War conflict' period*. The connection between science and Empire is based on the particularities and crisis conditions of a war's environment; (iii) *'Political' period*. It is the particular political system and/or structure that offers the favorable conditions for the entanglement between and idea of science and a notion of Empire; (iv) *Specific scientific area and/or period*. This is when it is understood that a particular period of a discipline—for example, history of medicine during XIXth century—or a scientific area—for example, quantum mechanics—allows for a clear comprehension and better interpretation of the relation between science and Empire; (v) *Post-colonial and 'Science Studies' period*. This is the name used to indicate the development since the 1980s referring not only to the characteristics of the relation between both notions, but also to the fact that, as concepts, science and Empire went entangled and became part of the same *épistémè*, to use Michel Foucault's (1926-1984) expression.

The relation between science and Empire, in its modern Western meaning, that is, from a historiographical point of view, since at least the XVIIth century, can be analyzed and presented following the above indicated five periods. However, these periods also try to cover the *subject* of Empire even if it was not considered yet as such: there is an important difference between the *notion* of Empire and the *concept* of it. This distinction—and these two forms—constitute what we can call the *epistemological ground* of the meaning of Empire. As a *notion*, Empire can be tracked anywhere in history and chronologies, while as a *concept* Empire is a recent phenomenon. As a notion, Empire has many forms, and it was not always acknowledged as such: it is an *argument* within history, but as a concept Empire functions at *historiographical level*, that is, Empire as a concept allows us to re-write both the past and the future. These five indicated periods are not necessarily successive, or chronologically established: they operate more at random and in alternate ways. The definitive entanglement between science and Empire in Western domains occurs when, towards the end of the XIXth century, an *imaginary dimension* and a *material dimension* of the notion of Empire begun to be considered as *concepts* (see Section 3.3). It was at that moment that (i)

science also became associated with knowledge and (ii) Empire became associated with modern State, capitalism and liberal democracy.

Nowadays the notion of Empire, that is Empire as a simple *historical argument*, is associated with information and does not have much theoretical relevance for authors dealing with it as a specific subject. Furthermore, in some cases this notion of Empire is associated with a certain administrative and bureaucratic point of view: a government or State-orientated perspective. In fact, the latest works dedicated to the relation between science and Empire are a clear product generated, among other things, by the *historiographical* consideration of Empire as a concept. The idea, for example, of the existence of something called ‘colonial science’ is a clear indication of this situation. Paradoxically, beginning with Friedrich Nietzsche (1844-1900) and ending with Sigmund Freud (1856-1939), on one hand, an agreement can be noticed with regard to the decadence of European culture, and on the other hand, academics celebrate a ‘triumphal’ notion of European science and State. In this respect, it is not surprising that recently many authors have postulated as non-compatible the rise of a technological and scientific culture against another humanitarian and artistic culture that is falling.

3.2 Science as Knowledge

Following the previous point we can establish that the relation between science and Empire, despite the fact that, as related arguments, they started to be mentioned during the XIXth century, they only emerged as an analytical area when Empire as a concept was already in place. Equally important, they also emerged at a time when ‘science’ was considered as pure knowledge in an empirical and philosophical sense. It was only towards the end of the XIXth century and the beginning of the XXth century, when science started to be considered as the most advanced and ‘perfect’ form of knowledge and philosophy, that from the analytical point of view it was coherent to consider the relation between science and Empire as natural and necessary. In this sense, the emerging of the analytical relation between science and Empire cannot be separated from the development of the philosophy and history of science, as in fact it cannot be separated from the development of a ‘scientific culture’ aimed to dominate our contemporary *social imaginary*, as it is very clear in a number of works by authors such as Bruno Latour.

Therefore, the idea of science and Empire is directly connected with a notion of *knowledge* as it was this notion, in philosophical and European terms, a notion that facilitates the introduction in the colonies of the *universalization of the reality* through the idea of ‘naturalism’, ‘rational language’ and ‘scientificity’ — which was a completely new and radical cultural phenomenon since the disappearance of the idea of God as the ‘Universal Master’. In practical terms, this universalization was implemented by (i) an idea of education, (ii) progress based on institutional achievements, (iii) and enlightenment conception of communication — set and ensemble that prevail even today. In order to overcome this situation and to avoid the simplification of standardization (‘globalization’), a number of authors introduced the notion of *translation* as a fundamental and basic concept to the study of philosophical, scientific and cultural concepts. Consequently, the idea of science and knowledge as a corpus and/or narratives that are *translated* into another culture represented an approach

that somehow acknowledged the questions raised by the notion of *location of knowledge* previously indicated. Thus, this *translation* features/contains two immediate dimensions: the material and the imaginary.

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Biographical Sketch

Claudio Canaparo was born in 1962. He holds a degree in Political Science and an MA in Science. He received postgraduate training at the University of Bologna (Italy) and made his PhD at King's College London. He was engaged by the University of Exeter in 1995. He has been invited to several Universities in US, Latin American and Europe. Recently he was Visiting Professor at the University of Louvain (Belgium).