

From Big History to la Gran Historia? A Conversation with Fred Spier

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*I*ntroduction

Big History is a historical process-oriented perspective that integrates the scales of space-time explored through twentieth and twenty-first century historiography (short, medium, large, and very large durations) using some of the best available knowledge of natural history, including the formation process of the cosmos. In doing so, it seeks to achieve a specific objective: to connect human history with the history of the universe through an interdisciplinary investigation.

This perspective emerged in 1989 in the form of an elective course that aimed to present a general overview of the discoveries made by the modern historical sciences. Although the course was developed as an isolated initiative at the University of Macquarie in Sydney by David Christian, it sparked the interest of academics such as Johan Goudsblom at the University of Amsterdam in the Netherlands.

Later in 1994, Goudsblom and his student Fred Spier designed a similar course in Amsterdam that had great success. Due to its phenomenal reception, including a radio program and the growing number of researchers

that adopted the agenda of Big History, Spier found a favorable context to publish his first book about the subject titled *The Structure of Big History*.¹

Based on this academic environment, Christian and Spier organized surveys and international conferences with astrophysicists, geologists, biologists and complexity theorists while seeking to develop a strategy to unite *natural history* with *human history*. From this effort new comparative and interdisciplinary methodologies emerged, consolidating a historical account in which the vagaries of humanity were linked to the vagaries of the Earth and the universe. Although such perspectives had already been considered within *World History*, *Big History* could explore new aspects of the process by adopting a temporal scale that included the emergence of galaxies and the complexity of life within one single field of study.

Since the birth of *Big History*, its members have worked continuously with researchers of *World History*. In his book *Big History and the Future of*

1 Fred Spier, *The Structure of Big History: From the Big Bang until Today* (Amsterdam: Amsterdam Univ. Press, 1996).

Carlos Daniel Pérez (Universidad Nacional) y César Duque Sánchez (Universidad del Rosario) on February 27, 2017 interviewed Fred Spier, University of Amsterdam, who is the author of *La Gran Historia y el futuro de la humanidad* (*Big History and the Future of Humanity*).

*Humanity*² Fred Spier pays honor to the unparalleled support by William McNeill, one of the most prominent authors of *World History*. Additionally, since the 1980s David Christian has been an active member of the *World History Association* (WHA), of which he still forms part. However, the WHA and the proliferation of *World History* as an approach were not involved in the birth of the autonomous organization that brought researchers of *Big History* together.³ In 2010, during a small conference convened by Walter Alvarez and Sandro Montanari, in Coldigioco, Italy, the participants decided to create the *International Big History Association* due to the success of this approach in the world.

Since that time, researchers from Russia, Europe, Australia, Asia, Latin America, and North America have started investigations, education, and the development of innovations in *Big History*. This is, for instance, the case with the contribution made by Walter Alvarez, a geologist from the University of California, Berkeley, who is well known for his hypothesis about the extinction of dinosaurs caused by the impact of a meteorite. Using his contacts at *Microsoft* he supported the project of his student, Roland Saekow, of designing a software tool that creates time lines according to the “Chronological Revolution” proposed by Big History, in other words: Chronozoom.

Although *Chronozoom* was initially used in various ways within education, its pedagogical potential was developed more fully by Moigan Behmand and her group at Dominican University of California in a curriculum based on the book by Cynthia Stokes Brown. Meanwhile, David Christian and Bill Gates had agreed to create the *Origins* project, or the *Big History Project*, to teach it in secondary schools in Australia, the United States, and South Korea. This project is supported by the *International Big History*

Association. However, it is an autonomous project aimed at countries such as Australia and the United States. Nonetheless, in the case of the Netherlands, for instance, more than thirty high schools have implemented the core of its curriculum.⁴ Some of the theoretical advances and research results resulting from Big History investigations can be found in a fundamental book published in 2004, David Christian’s *Maps of Time: An Introduction to Big History*.⁵

After nearly thirty years of the project, it may be time to celebrate its achievements, while one more milestone may be added: the 2010 publication of Fred Spier’s *Big History and the Future of Humanity*.

This book includes various innovations that have come as a result of the courses and lectures hosted by the University of Amsterdam. In this book, the important connection between human history and natural history is emphasized that was already part of the inquiries of his mentor, Goudsblom,⁶ and his colleague Norbert Elias.⁷ It is also worthy to note that the text is a result of the intellectual cooperation between a number of specialists among various fields of study rather than of the speculations of scholars interested in writing about the historiographical spectrum of everything – like it was attempted with *Universal History* in the 18th, 19th, and 20th centuries. Nevertheless, although the project may appear to create a “total history”, Spier acknowledges that in *Big History* the researchers cannot claim to be conclusive and, therefore, that the approach is and will be open to dialogue and to the findings of new research.

4 Interviewers’ note: We are grateful for this information from comments by Dr. Spier.

5 David Christian, William H McNeill, y Antonio-Prometeo Moya, *Mapas del tiempo: Introducción a la Gran Historia* (Barcelona: Crítica, 2010). The English version was published in 2004.

6 Johan Goudsblom, *Fuego y civilización* (Buenos Aires: Andres Bello, 1995).

7 Norbert Elias, *El proceso de la civilización: investigaciones sociogenéticas y psicogenéticas* (*Sociología / Sociology*), First (Fondo de Cultura Económica, 2010).

2 Fred Spier, *El lugar del hombre en el cosmos: la gran historia y el futuro de la humanidad* (Barcelona: Crítica, 2011).

3 Interviewers’ note: We owe this important information to comments by Dr. Spier.

In *Big History and the Future of Humanity* readers will encounter some novelties and new insights compared to other books of this genre. Following astrophysicist Eric Chaisson's⁸ theoretical approach, Spier constructs an overview of the universe, and of biological and human history, that tracks the changing energy flows within the formation of separate complex systems: due to the Goldilocks conditions, throughout the history of the universe transitions appear that are characterized by substantial changes in the environment that determine the emergence of truly new aspects in the universe.⁹ The appearance of the first stars from atoms, and of heavy elements from dying stars, are such transition events. While the approach by David Christian and the *Big History Project* has outlined at least eight thresholds for understanding energy flows, Spier's position does not align with this scheme for describing Goldilocks conditions in complex systems, in which during a brief period of time, the organization of energy flows has overcome the entropic tendency of disorder to produce highly complex systems such as the human brain.

Another central aspect in Spier's book is, as the title of the book indicates, the future of humanity. Especially interested in the mechanisms of harnessing energy, Spier examines possible transitions toward energy systems that are aligned to the Goldilocks conditions of our species, that avoid its destruction by either the depletion of resources or by an excessive production of entropy.

In this respect, there seems to be a notable disagreement between the works of Christian¹⁰ and of Spier. While Christian suggests that a transition

8 Eric Chaisson, *El amanecer cósmico: orígenes de la materia y la vida* (Barcelona: Salvat, 1994).

9 Interviewers' note: The term "thresholds" first appeared in 2011 in David Christian's TED talk, and was later adapted into the BHP and his book *Big History: Between Nothing and Everything*. However, Professor Spier prefers to use the term "transition."

10 Christian, McNeill, y Moya, *Ibid.*

towards a mode of sustainable life is possible without abandoning the existing technologies, Spier is skeptical that such a transition can happen without doing so. These two perspectives are significant as they are derived from the logic that is articulated in these books. Christian's book is concerned about presenting to the reader a "modern creation myth", while Spier is interested in finding patterns and variations of energy density within complex systems.

It is possible that these two visions are related to certain academic fields which predate the intellectual careers of the two authors: Christian starts with the premise in which alternative systems to capitalism are not explored, possibly due to his comprehensive knowledge of Russian history and of socialism in reality.¹¹ While for Spier, the search for alternative systems compared to the current one is part of his agenda due to his first-hand knowledge of the reality of underdevelopment in Latin America (where he researched his doctoral thesis), in addition to his interest in sustainable relations between our species and its environment.

Finally, Christian's book as well as Spier's have made a series of arguments about what makes so unique the complex systems of human beings in comparison with other systems that form part of the universe. In doing so, *Big History* has focused its attention on a theory of learning. In human beings, the development of the brain functions through a complex program which forms part of the cultural development of each society, in which people learn what others have bequeathed them. It is exactly the complexity of the systems that human beings form with each other that is mediated by this capacity to turn them into a cultural-historical

11 Note by the interviewers: In correspondence exchanged after the interview, Professor Spier has suggested that their differences in undergraduate and graduate educational levels may have influenced the differences between these two points of view. Within this context it is important to note that professor Spier first made a career in biochemistry, and later in cultural anthropology and social history.

process, from being part of a process to being part of a socio-genetic process.

As will be seen below, a number of those aspects receives attention in the following interview.¹²

Interview

Interview Group (I.G.) The first question is a bit biographical more than anything else -- how did you come to this idea of Big History and how did you initially approach the problems of Big History?

Fred Spier (F.S.) Well, I discovered *Big History* through my supervisor Johan Goudsblom. He had read an article in *The Journal of World History* that David Christian wrote about his course in Macquarie University, this was back in 1991. I was very busy preparing my doctoral thesis on the research I had conducted in Peru, which is why I didn't give the topic much thought, but it did spark my interest, probably because my work in Peru was linked with this most basic and large question:

"How did we arrive here on this planet in this ecological situation in which we now find ourselves?" This nagging question came to me when I was young, when I first saw the famous photo of Apollo 8, that you all surely know, where you can see the Earth rising over the moon's surface, taken by the astronauts. I saw this in 1969 and it completely changed my perspective: I realized that the world and the present situation were substantially different from what I had learned in primary and secondary schools. I realized, like many people in that era, that we should question

what we are doing on this planet, where are we going, and what are the problems we are facing? I wanted to know, then: how did we arrive here, in such an obviously precarious situation.

Earlier I had been studying chemistry and finished with a degree in biochemistry. I found it interesting to do all of that, but I did not want to pursue a further career in it because it did not make me feel good. I wanted to face that question, but I didn't know how to do it because I did not know world history, I had no idea. So, I decided to study a society that lived more closely connected to the land, where basically they eat their own products: I wanted to know if they – possibly – treated the Earth in a different way, with more care. For that reason, I went to Peru. I lived in an Andean village called Zurite, close to Cusco (Qosqo), the Incan capital. That became my second home, I did not know it then, but that is how it turned out to be: every day I am still watching the news, which can now be seen live here, the *Matutino* of Cusco, I have friends there, all of that has left a profound impression on me. In that village I also learned to speak their language, in my gringo way, of course, but also a little in a Peruvian, *cusqueño*, way. I can hear, for example, that you are not Peruvians, you are Colombians. I truly learned a lot, much more than I thought, their reality was a bit different than I previously thought, but it was all very interesting.

At the end of my research project I was writing an article about world history in terms of ecological history. At that very moment *Big History* arrived. It was then that my supervisor Johan Goudsblom and I decided to begin creating a course that follows the model of the *Big History* initiative in Australia. We organized the course in the Netherlands, in Amsterdam, in 1994, now already more than twenty years ago. The course provided a tremendous education, because it was necessary to look for specialists in different fields like astronomers and geologists. They not only gave lectures in the classroom, but they also shared their knowledge with us drinking a glass of wine, or beer, while having conversations about all these things. It

12 Interviewers' Note: The question that provides the title of the interview derives from the reception *Big History* has had among Colombian students that currently make up a hot bed of historical genetic studies in the National University of Colombia. In short, the central point of the discussion is whether what has been called *Big History* is a culminating point of intellectual history, in which it reconstructs all knowledge accumulated by the species to narrate a modern myth or if, alternatively, the point of departure is to think of a general theory surrounding the underpinnings of the diverse complex systems which construct the universe.

was a great learning experience and it served us well in organizing the courses. I had to read lots of books to improve my knowledge. It was an effort of nearly ten years, but I also came to realize that there are certain, I am trying to find the correct word in Spanish, “patterns” they say in English.

I.G. Patterns (patrones)?

F.S. Yes, that is the correct word: patterns that one can only see while looking at the whole. As a result, I began to write my first book about the structure of Big History, and after that I asked myself if perhaps there were ways of explaining it. Already the first book seemed rather daring and risky to me, because I didn’t know anyone who had tried to do so. After I had written the book, I learned that a number of historians had tried to do that, but earlier I didn’t know where to find them. This happened before the internet, but after it emerged, it became possible to look for people, books, and information. From that moment I began to search for and contact people, asking them if they perhaps would be able to come to Amsterdam and give a lecture. Thankfully, we had the money to do so. That is how I developed our network of connections and knowledge, how it all started to grow. Then, the moment came in which I thought “ah, yes, it is possible to explain Big History to a certain extent”, this is my second book, which you know as well, because it has been translated into Spanish.

I.G. Relating to that and having in mind that other researchers of Big History had studied Russian history, world history from a North American perspective, geology, or the history of the dinosaurs, how did the experience of having lived in, and having conducted research in, Latin America relate to your approach to Big History? Did it have any influence?

F.S. It’s difficult to judge for me, but what I can say is that it has very profoundly influenced me. I don’t think I will ever be the same person again that I was before having lived on your continent. Not only in terms of knowledge, but also in terms of my emotions it has had an overwhelming influence, because this is truly a very special continent that has stolen my heart.

Also, I have learned, to a certain extent, to look at world history, the world, and history, from the perspective of your continent. For example, I realized that the colonization of Peru and Colombia was intimately linked with the independence of Holland from Spain, because Spain’s main interest was in Latin America, in the extraction of silver, and it was therefore much more important to invest money and efforts in Latin America than in Holland. But I cannot really judge it, because it has been such a profound experience for me.

I.G. So, we now move on to the next question which deals with something that was to some extent already mentioned, which is the nature of the interdisciplinary collaboration. Big History has presented a new form of collaboration between the natural sciences and the social sciences, a new form of interaction between the two. What do you think should be, as part of new collaboration, the role of history? How does this new idea of a universal history affect the historical discipline or historians in general?

F.S. Well, I cannot judge how all historians think, but I think that human history has a very high level of complexity, and because of that it needs its own approach, its own theory. I think that it is absolutely possible to understand human history as a part of everything, and a large part of that entire history is studied through the natural sciences. For example, our bodies are organisms that function in biological ways, all of us need to eat, drink, and have protection. Many people go about their days looking to satisfy those needs and have hardly any time to do anything else, much like how life is in Zurite. It is a luxury that exists for people like me to dedicate their lives to study, take distance, lecture, and write. The vast majority of people throughout the history of our species have not had this luxury, they have continually been struggling to address their primary, rather basic, needs. Today, many people still live in these circumstances, who struggle for natural resources, land, or other people. This is one of the ways in which human history relates to natural resources and needs to be understood as

such, perhaps a little more than many historians may be thinking.

I.G. Agreed, and related to the perspective that appeared with Big History: is there an advantage for human beings, for our species, if they understand history in terms of the largest possible time-span? What does the integration into one single whole of human history and the history of the universe represent?

F.S. Well, to determine the general characteristics yes, but in detail obviously not. Like, when we want to write a personal history, how many details could we mention? Very few – because you can fill a great many books with those little details. While describing the broad outlines it is possible to mention some details, however the great majority of details are not really used. In doing so one is looking for the broad outlines as well as illustrations. This is what Ptolemy said when writing his cosmology, his geography, and what he called chorography. He made a distinction between geography and chorography. Geography was geography of the world, it described the globe in general terms, while chorography described a region, or a city, more in detail. He said: “while studying geography one looks for the general outlines, but while studying chorography one looks for more local details”. It’s always the same, we haven’t changed, and this discussion has been going on for almost the past two thousand years or so.

I.G. Regarding the great transformations of the human species, the level of complexity of human society is possibly the highest that we know of in the universe. This has led to a revolutionary transformation on the Earth: leaving aside what happened with bacteria, humans have caused the largest impact on the biosphere in very little time.

F.S.: Yes, that is correct.

I.G. In that sense, there is also a reflection, in that there is a certain awareness that seeks to explain the transformation of the biosphere and how it must relate to the conditions within which our species knows and learns.

F.S. Yes, to a certain extent.

I.G. Is it possible to consider what is authentically human in relation to learning and knowledge, what is authentically new when compared with other species? And above all, relating to this autonomy that has been emphasized from biology to understand the growing difference between the environment and the organisms that form part of it, is it possible to say that human have reached a new level of autonomy in relation to the environment, the biosphere, as a result of its learning process?

F.S. For the moment, yes, but we don’t know how long it will last, because we are destroying what we have achieved, and, if this is the case, what are we going to do? I was very fearful for the coming generations and for what we are doing in relation to them, that is why I began studying all of this. Right now, I feel the same fear: I think that I understand our situation a little better, but I also know that what we need to do is act. In the 1970s, maybe even the 1980s, of the last century among people and large enterprises there was much more awareness and more efforts than there are today. Some of these efforts remain, like the electrification using renewable resources, but there is a fierce struggle around the world over natural resources between the United States, China, Europe, and Russia. This also occurs in Latin America, including the exploitation of minerals by the Chinese in Peru, for instance. I don’t know what is happening in Colombia concerning this matter.

What I would want to happen most at this moment is that people be aware of where we are and act. This is my personal opinion: inasmuch as we are citizens of this planet, we should take action by organizing a world in which we can live in peace and in sustainable ways in terms of in energy use, this is my hope and for that reason I am doing this. I do not know if many people think as I do or want to do so, but what can I do? It is my hope.

I.G. In achieving a cultural change and a degree of reflexivity related to these problems at a global level, in your view, do you consider a historical theory is necessary that connects not only the environment but

also the problem of cultural change and learning as part of the transformation process of human societies?

F.S. Yes, everything is important, and it all depends on the society in which one finds oneself. For example, I can easily understand that in countries with fewer economic resources Big History will not be that interesting, it is perhaps a bit strange for many people, because it doesn't provide answers to their most direct needs. But I am not going to say that Big History is the only way to realize this dream: I think that maybe religions can be more effective in such situations, but I cannot really judge that. Maybe there are endless ways of doing this. Big History is one of those ways, and is my way of doing so.

I.G. The perspective of Big History opens possibilities that cannot necessarily be understood by all of humanity at this moment. However, starting from your position, the possibility exists of connecting our history with the history of the universe, something that was previously not possible, there was no way of doing so.

F.S. Yes, I think that Big History is the first form of history that offers the possibility to create a universal history that can be generally accepted by many people in many different countries, but it requires having deep discussions with those peoples and cultures. That's why I am very interested in what you think, with your perspective from Colombia, which surely is not uniform, given that without any doubt there are various perspectives within your country. I think we are at the beginning of a discussion in those terms, which is why we are at the beginning of the project of Big History rather than at the end. Personally, I would very much like to see an open discussion with people of different cultures: what they think, what their opinions are, what is missing, what can we improve, this would be truly interesting.

I.G. We have a question regarding the two points which you mentioned, the first is the worrying panorama of the exploitation of energy resources around the world and the production of contaminating agents that cause a high level of entropy within the system. The second, the alternatives that have

emerged to counteract the effects of entropy as, for example, the development of new technologies or the emergence of organizations of citizens and social groups that have begun to intervene and fight for those natural resources in certain areas around the world. These are the two faces of the panorama, one part is the growing production of entropy, the other is the responses that start to emerge to try to equilibrate the system. We were wondering if the growing process of neoliberalization in a free market economy -that came from the dissolution of the bipolar system of the Cold War and that coincides with the change of the consciousness towards the environment previously mentioned- would be creating a transformation on the planet that can attain a point of extreme hysteresis with environmental consequences that would be impossible to reverse. Which possibilities do you think exist related to the hegemony of neoliberalism and the high levels of entropy generated by the free-market economy?

F.S. Well, I am totally in agreement, this is another concern of mine. I would like to see the United States behave less arrogantly and be more collaborative. I think that is the intention of President Trump who at least wants to collaborate with Russia. It also has to do with the lack of really correct information in the public sphere: it is difficult to say, there is a lot of propaganda, as you surely know. Sometimes I think that the press is more open, more critical, in Latin America than in the United States and in Europe. For example, when I watch *El Matutino* from Cusco I hear very critical questions directed at the authorities, to all people, they don't want to create propaganda. There is a more open, more critical attitude in Latin America than in many other places, and that is something that you can teach to the world.

I don't know how to escape neo-liberalism. There needs to be a fight to overcome its deleterious consequences by bringing awareness to the people in ways that happened in the 1960s and 1970s, even now. It's possible that the situation is now worse than before, and the deceptions of the press don't contribute to improve our information in relation to

this situation. For this reason, I always emphasize the two pillars of the scientific method: observation and interpretation. You must always ask what something is, what are the observations, that always contain certain interpretations, and what are the interpretations, instead of responding with rhetoric when faced with observable evidence. For my students, this is very difficult at the start of each course, because they have learned in primary school, high school, to discuss opinions using rhetoric, but only occasionally with arguments based on observations. This is extremely important because it allows analyzing a situation, recording observations, and checking interpretations. The strength of science is based on those pillars and they must be applied well. Teaching the importance of these pillars is one of the objectives of my classes, showing observations and engaging in experiments.

I.G. Perfect, now we would like to note that from the approach of Big History it can be argued that current societies have achieved very high levels of complexity. However, most of the data have been obtained by measurements of the levels of energy consumption in countries with higher standards of living, with large gross domestic products and with high levels of technological development. What would happen if we observed the energy consumption of countries with scarce resources, with high levels of poverty, in with people who have little access to cutting-edge technology? Could we talk about a uniform trend in the increase of the planet's complexity? Under what conditions has Big History observed such systemic variations in the degrees of complexity in which today there are various degrees of complexity in different areas of the planet?

F.S. I could not agree more, and I realized that while living in an Andean village: I knew that they were not causing the problem, but rather we were in the Netherlands. If there were a sudden disastrous event that changes the conditions in which humanity lives, the inhabitants of this village will survive more easily than us: they will always have their land, their animals, their corn, and their potatoes. However, also

they seek to advance, to change, they want this luxury of rich countries, and I understand very well that they want this.

What can we do so that everyone on Earth has the living conditions enjoyed by the inhabitants of rich countries? I don't know the answer, but we can look for ways in an on-going discussion, it's the only way to do that. Being willing to enter into a dialogue with people from different countries, with their own culture, in their own world, is something we can do to achieve this objective. But I also understand that the economic situations are very unequal, knowledge is unequal, opportunities are unequal, I realize this and I don't know how to solve this. I think that mutual respect is part of the change, that we respect others and then see what happens. This is extremely difficult, as you know in Colombia.

I.G. In your book *Big History and the Future of Humanity* you emphasize that many of the changes of the human species are predicated on their interaction with the environment, a very interesting point that could have been taken from environmental history. However, in the human species there appears to be a singular characteristic, the constructed autonomy: thanks to this, our species could produce changes in the environment that affect the biosphere, changes that are relatively independent from the limits that are posed by the environment. Our question is: how are the transformations of human history explained from Big History, taking into account the forms of social organizations that provided the conditions of those changes? Norbert Elias - for example - proposes a relation between sociogenesis and psychogenesis.¹³ Randall Collins elaborates it through his theory of conflict,¹⁴ Marx spoke of class struggle as a driving force of human history,¹⁵ how does Big History look

13 Norbert Elias, *El proceso de la civilización*. Investigaciones socio- genéticas y psicogenéticas. (México D.C: Fondo de Cultura Económica. 2015).

14 Randall Collins, *Sociología de las filosofías: una teoría global del cambio intelectual* (Barcelona: Hacer, 2005).

15 Karl Marx y Friedrich Engels, *Manifiesto comunista* (Madrid: Alianza Editorial, 2001).

at this particular case?

F.S. Well, this is a very interesting question and basically it shows us that a theory of human history is still lacking. I think that the sociology of Norbert Elias offers a very interesting way of thinking, but it has not yet sufficiently been elaborated, it is a task we need to do. I have been working on that, and David Christian also wanted to do that with his collective learning. But what is lacking is a theory that offers a general framework for understanding historical changes. But, yes, it is really necessary to add such a theory to the perspective of Big History, I completely agree.

I.G. From the point of view of Big History, would the subject of learning be a fundamental part of such a theory? Should it be one of the pillars of the theory that is needed? Possibly Elias' use of the term psychogenesis could be integrated into it as well.

F.S. Yes, I think so. What you see with Elias, this emphasis on learning, it is not really prevalent in his theory: he talks more about changes in behavior, that are also forms of learning, but he doesn't have much of an elaborated theory on this matter. It is possible to incorporate it, I think so, but it has not yet happened. I think we need to combine this idea of learning with his theory, but also forgetting, the combination of those two processes with structures of power, with interdependencies and skills of the societies involved, this is what is at stake in this approach.

I.G. You have already broken down some of the reasons why Big History has not yet landed in Latin America, could you elaborate on this a little more? Why do you think this perspective has not generated so much strength?

F.S. Yes, sure. Right now, I am studying Spanish cosmology, I don't know if you have heard about this, I didn't know much about it. For example, I realized while studying the history of Peru that there had been cosmologists such as José de Acosta, who wrote the book *Natural and Moral History of the Indies* (at that time, moral history meant human history); now I am reading a book called *Secret Science: Spanish*

Cosmography and The New World,¹⁶ which was published in the United States. What the Spaniards did when they began dominating Latin America was to gather information, create images, that allowed them control of the maritime routes. They looked for a lot of information and sent it to Spain. There they constructed large images of the heavens and the Earth, their characteristics, their resources, the inhabitants, and they called it cosmography, but they did this in secret because they didn't want anyone else to know. In the colonies, they didn't have these more complete and general images, but in Spain they did. The Dutch managed to get hold of some of that as well, which is how it was possible for me to buy a map of Peru from 1640 in Amsterdam which indicated the place where I did my research, *Xaquixaguana* in Quechua, while when I was in Peru I could not buy or even find such an ancient map. Moreover, there was information available from which such a map could be made, but not Peru but rather in Spain. This happened in Colombia, too.

Colonization left the colonized peoples in a dependent position, and that explains why there is not a tradition of cosmography in Latin America while there was one in Spain. This condition of a monopoly on this knowledge may also explain why there is an interest in Big History in Spain, I think, much like there is a tradition of cosmography in Holland. I think you (in Latin America) still have that disadvantage, in that sense, it's still a colonial heritage. We have to put up a fight to make people aware of this, because we need to overcome it. Overcoming this disadvantage will possibly take generations, however if there is more awareness, it will be easier to overcome. I am thinking about writing on this subject, and it would be interesting if in each country of Latin America such a history was written in these terms. There is an excellent historian from Colombia, Antonio Vélez,

16 María M. Portuondo, *Secret Science: Spanish Cosmography and the New World*, (2013). Chicago, University of Chicago Press.

who could write such a story.¹⁷

I.G. As our one of final questions, we would like to ask you about the projects you have in mind for the future.

F.S. I already talked about writing about this idea of ancient cosmography and Big History, which is also found in China in the Daoist tradition. I think that in each country there is at least one person who wants to study Big History. I am also working on the history of plants, bacteria, animals, and how people have used them in their environment.

I.G. There are two ongoing projects in relation to the proposal of Big History at the University of Amsterdam. The first has to do with the little big histories, what do you think is the plan for the future of this approach? What do you think about the project of big river histories, such as the Nalón in Spain?

F.S. I think that this project in Spain has the potential to bring people together in the university, to collaborate. The problem is that there are many subjects that can developed into such little big histories, but this does not mean that they contribute to formulate a more complete and clear theoretical body; this is something that is missing. I am thinking that it might be possible to construct something that could truly contribute to a more general image of Big History. This is my hope. The little big histories don't do much of that right now, although they provide a lot of motivation to the students.

I.G. The second project, along the same line, are the courses offered in Coursera, the MOOC educational platforms, and the educational commitment of Big History to schools in the Netherlands, the United States, Australia, and South Korea. The virtual media, through the internet, allow the ideas of Big History to reach a wider audience, and you at the University of Amsterdam have just launched a course of this kind. What are the expectations for those courses and for those educational platforms in the future?

F.S. Well, in relation to expectations we will see

¹⁷ Antonio Vélez Montoya, *Del big bang al homo sapiens*. (Bogotá: Villegas Editores, 2004). However, the first editions of his book were published already in the 1990s.

what the numbers are of the people who will take it, but there is also a political aspect: for the University of Amsterdam it is important to show that it can produce international courses, for that reason we have obtained financing. For the bureaucratic system this is important, and we are always in a struggle for resources, which are defined by the number of people who take the courses. I'm not sure what is going to happen, it's impossible to predict, we'll see. I hope that these courses will also be taught in other languages, obviously in Spanish. Maybe you could start one.

I.G. As we told you, we are just beginning to meet, discuss, while doing a few projects together, and we hope that we can also continue with the initiative, as a group, to talk about topics of Big History, informing each other, reaching out, etc.

When we did our explorative sessions to create the bulk of the questions, we also reached a conclusion: what you are attempting to propose as Big History seemed very different to us from what we had seen in the discipline: you offer more trends and patterns, explanations rather than just a description of what had occurred, which is what has traditionally been done. In this sense, for us this has been a complete novelty, and that is why we also think that it is extremely valuable to start talking about these themes here in our country.

Thank you very much for this conversation.

Conclusion

As shown throughout the interview, Fred Spier seeks to explore, through Big History, the lengthy process that unites our history with natural history: using energy density as a methodological resource to understand how our present and past connects us with the history of the entire universe, with the most basic principles in which the emergence of authentic novelties such as stars and galaxies took place. On the other hand, it also clarifies the urgent need for a revolution in the use of energy and describes the dramatic ecological situation in which we have arrived today. In this context, the possibility of peaceful coexistence among the members of our species is nourished by a new dimension which puts

into perspective local differences in the use of energy (measured in terms of the control of natural resources and technological possibilities) as well as its impact on global relations.

In its approach, Big History opens new possibilities to answer some of the most relevant questions for humanity, for example: the future of ecological sustainability. It is a story addressed to all members of our species, regardless of nationality of those who are interested in understanding it. For that reason, it is still a project with an open agenda, whose main objective is to build a more realistic image of the world and its history.

On the other hand, Big History offers a new point of view to reflect on our situation: given that the magnitude of the human impact on Earth has been much faster than at any previous historical moment, it is necessary to be aware of the increase in the levels of entropy that humans have caused on Earth. Only from this awareness can we assess from a more detached perspective the creative and destructive potential of the different forms of organization in which we have lived and, eventually, look for a way that leads to the future of the human species towards a more ecological, peaceful, and sustainable course.

For Fred Spier, the arguments that Big History offers are not simple rhetoric but are derived from two fundamental pillars: observation and interpretation. This is intended to control ideological views that can blind us to the greatest problems of humanity -such as climate change- or maintain harmful social systems that pretend to solve current problems through obsolete solutions such as industrial or totalitarian modes of production. In this way, Big History constitutes a cluster of observations that demystify rhetorical opinions, one of the aims for which it uses its investigative power.

In the interview it is apparent that there is a necessity to integrate in the perspective of Big History with the most advanced insights that researchers of the theory of knowledge and learning have reached so far. In this a way, a new field is opened up for exploring the complexity of the history of human culture within its

different forms of social organization.

Big History is far from being a closed and complete theory: it is a perspective open to research, based on very solid observations at the theoretical level and with a still very large agenda to explore. It is only the beginning. From Latin America, what could we contribute?

