

The virus is up and the system is down

A Peruvian case for cosmopolitics in urban studies

Covid-19
cosmopolítica
Lima
no humano
diseño urbano

Covid-19
cosmopolitics
Lima
non-humans
urban design

Chichizola, Bruno Enrico¹

¹Independent researcher
<https://orcid.org/0000-0001-5229-8476>
b.chichizola@alumni.ucl.ac.uk

Citation: Chichizola, B. E. (2021). The virus is up and the system is down. A Peruvian case for cosmopolitics in urban studies. *UOU scientific journal* #01, 132-141.
ISSN: 2697-1518. <https://doi.org/10.14198/UOU.2021.1.11>

This document is under a Creative Commons Attribution 4.0 International license (CC BY 4.0)

Date of reception: 29/03/2021
Date of acceptance: 24/06/2021



El virus está arriba y el sistema abajo

Un caso peruano para la cosmopolítica
en estudios urbanos

The social distancing that the Covid-19 pandemic has forced upon humans demonstrates that a common space can be forged through virtual means. Exploring further a conceptualisation of 'common' – which has been defined as all peoples common needs - that can encompass nature and dwelling, I draw attention to embracing a conceptualisation of 'common' rooted in a cosmopolitical approach.

Following an auto-ethnography methodological approach, I exemplify how non-human actors (software systems and the SARS-CoV-2 virus) intervene in the human experiences of the city of Lima. I will argue that urban design could benefit by taking into consideration the constant reconfiguration and co-constitution of nature and culture to embrace a broader understanding of dwelling. This means to design with a cosmopolitical approach.

The social distancing that the Covid-19 pandemic has forced upon humans demonstrates that a common space can be forged through virtual means. Exploring further a conceptualisation of 'common' – which has been defined as all peoples common needs - that can encompass nature and dwelling, I draw attention to embracing a conceptualisation of 'common' rooted in a cosmopolitical approach.

Following an auto-ethnography methodological approach, I exemplify how non-human actors (software systems and the SARS-CoV-2 virus) intervene in the human experiences of the city of Lima. I will argue that urban design could benefit by taking into consideration the constant reconfiguration and co-constitution of nature and culture to embrace a broader understanding of dwelling. This means to design with a cosmopolitical approach.

INTRODUCTION

The Covid-19 pandemic has pushed organisations and professionals to rearrange the way of doing things. Travelling without moving and learning from each other has been feasible through the creation of common virtual spaces. A testament to this is precisely the collaboration from which this journal has originated. Drawing from Isabel Stengers' concept of cosmopolitics, I want to draw attention to, and reflect upon, what a common space might mean and the role of non-human actors in the process of shaping it. This is all the more important to reflect on because, under the current social distancing measures, the importance of technology making our common world possible has intensified.

To understand what cosmopolitics is about, it is important to briefly state what role do non-humans play in it. Non-humans are not a synonym for nature, understood as the passive backdrop to human interactions. A cosmopolitical approach is based on the recognition that non-humans take part with us in the creation of reality regardless of their figuration. Hence, when we are talking about non-humans, we are effectively talking about an aggregation of individuals both human and non-humans - whether humans intervened in their creation or not. This makes it necessary to take a post-humanist perspective on social sciences that forces us to open up our understanding of what can be considered an actor. It could be argued that the central idea of this post

-humanist approach is "shifting the focus away from the internal analysis of social conventions and institutions and toward the interactions of humans with (and between) animals, plants, physical processes, artifacts, images, and other forms of beings" (Descola, 2014 p. 268).

Cosmopolitics derives from a fear of the climate crisis and an understanding that culture - what human society makes - and nature - not created by humans - cannot be thought of as separate (Stengers, 2018). To take a conscious decision that can affect the survival of human and non-humans requires looking for all intervening actors gathered around topics that are guided by complexity and constant change, much like the matters of concern coined by Latour (2004c). This requires hearing them speak - even if they can only vicariously - and taking into consideration the threats to the existence of any of them. This is the central task of cosmopolitics. Latour discusses Stengers' creation of cosmopolitics as follows:

'The presence of cosmos in cosmopolitics resists the tendency of politics to mean the give-and-take in an exclusive human club. The presence of politics in cosmopolitics resists the tendency of cosmos to mean a finite list of entities that must be taken into account. Cosmos protects against the premature closure of politics, and politics against the premature closure of cosmos' (Latour, 2004b p. 454).

Cosmopolitics has been addressed in a number of

areas of study. Here I focus on how some authors in urban and design studies have dealt with it to discuss a central idea: there is no specific domain or particular matter of what we have commonly known as "social" as opposed to natural. Within the area of architectural design, some have focused on rethinking what design is. Among other interests, cosmopolitics has been used here to challenge the conception of separating culture and nature, which points towards the ever-present reconstruction of architectural activity when interacting with the rest of what constitutes the urban (Zaera-Polo and Yaneva, 2015). In the case of urban studies, some have used cosmopolitics to be able to explore and name some of the emerging combinations of culture and nature that could exist (Blok and Farias, 2016). This use of cosmopolitics looks at the politics in urban connections without replacing grounded phenomena with inbuilt explanations based on analytical frameworks. In both cases, there is a clear disruption of what can be considered socially and naturally constructed. Both approaches find that such difference is one to be considered only after conducting a due exploration of the dynamics holding together the matter concerned. Following Latour (2005), it could be argued that for both cases a central interest is to provide a description of where all actors do something in a way that does not require the addition of a "social explanation". The only explanation possible is the one

affirming that some other actor needs to be considered, so it is the description that needs to be extended.

The next section will introduce the particular case presented in this article. Building on the importance of description explained above, I will present it in the form of a description of my own experiences. That means that the language and way of presenting things will change because it will not be written necessarily to match or connect to intellectual debates. For that, I will wait for the last section of this article. However, I would say that it is absolutely important to stay committed to description because otherwise, we could fall into the false illusion that cosmos - in cosmopolitics - implies transcendence. Instead, cosmos implies a grounded practice that refuses an a priori difference between what counts and what does not as a valid order of things. It could be argued, this idea is grounded on the belief that objective truth is not what humans see from diverse viewpoints; is the thing - non-human actors themselves - we are observing unfolding as multiple (Latour, 2005). This approach gives important possibilities to understand the city because it considers unexpected ways of experiencing it.

The following example will explore further the possible advantages of taking a cosmopolitical approach to urban design. I am going to use an auto-ethnographic example to reflect on connections between human and non-humans that shape

my experience of Lima while briefly reflecting on philosophical arguments around cosmopolitics.

THE CASE

Peru is one of the twenty countries currently most affected by COVID-19 worldwide (Johns Hopkins University, 2021). I will expand on the dynamics of Peru's capital city of Lima to understand how is this possible. It will bring to the fore how queuing could be understood as a political activity by discussing how it was a key infection site primarily affecting marginalised populations.

Peru can be described as a highly unequal and diverse country in which racist practices have permeated the way society works (De la Cadena, 2000, Zapata and Rojas, 2013). But doing this would certainly frame our discussion in all-human terms. Under the context of the current pandemic and climate crisis, it is clear for all of us that human societies are not just related to non-humans. We depend on them as much as they depend on us (Latour, 2004a). A tiny virus can mobilise the whole world reconfiguring the use and experience of the city. This situation puts into question the necessity of organising the world into human and non-human realms. By the same token, this requires thinking about the ways the built environment is connected to the wider environment. From this perspective it is possible to argue that 'What we study is not 'the city' as such, but multiple, open-ended, and often

conflictual urban assemblages' (Blok and Farias, 2016 p. 227).

After years of living in England, Spain and Australia, about a year ago I came back to Peru. The country where I was born and raised. Of course, I am glad to have the opportunity to come back and see my friends and family but I almost forgot how chaotic the city of Lima feels like. A city of around eleven million people. Located between the Pacific Ocean and the Andes, Lima is one of the few capital cities in the world located on a desert which, among other factors, contributes to the disparities of access to water in the city (Ziegler and Morales, 2020). Since the 30s *barriadas* - emerging and vibrant shanty towns - have made visible how Lima has been overwhelmed because of its concentration of life opportunities in the country (Matos Mar, 2012). To be clear, I am not saying that *barriadas* are the problem of the city. I mean that historical inequalities have impacted negatively on life opportunities for the majority of people living in them and that *barriadas* are a proxy to understand the city as overwhelmed.

Among the many things that catch my attention in Lima, the culture around queuing strikes me in particular. In Lima you queue at, to mention some examples, the phone company, markets, government buildings and, of course, at the bank. Queuing in Lima - and other parts of the country - is not just about the time you spend waiting and the opportunities lost that it entails. During the pandemic, it has become a

matter of life or death (Pighi, 2020). Queuing was considered to be a dangerous activity as it is difficult to maintain social distancing. You may perhaps wonder why this is so. In Peru, many people are still either afraid or incapable - because of lack of technology or the knowledge to use it - of accessing technological tools, which creates a significant digital divide in the country (Tello, 2019). Furthermore, the informal business activities sustaining seventy-three per cent of Peruvians (ILO, 2019) made them particularly vulnerable to the economic impacts of the virus and in need of support. Hence, when the government started to pay allowances, instead of waiting for an online transfer to your bank account many people had to queue to get it.

A couple of weeks ago I had to go to the bank. Throughout the pandemic, the government has implemented a number of online tools for people to keep socially distant while dealing with paperwork. Sometimes it could work wonderfully, sometimes it fails. It is a sort of 'black box' for many people like me that has no background in IT. However, I can confirm that it behaves much like the kind of actors that Bruno Latour has identified as mediators. These actors, unlike intermediaries, "transform, distort, and modify the meaning or the elements they are supposed to carry" (Latour, 2005 p. 39). Sometimes they work as expected and sometimes they might surprise you with a different outcome and in turn, make you do things.

In my case, it failed. I paid online for a document that was never delivered and to get the refund, instead of wiring back the money, I had to go physically to the bank. Despite the irony of this story, I set aside a whole morning just for it. I knew it was going to take some time and I also knew that I might not even be successful in my attempt. I spent about three hours only to get to the counter and be given a fairly common answer: I am sorry the system is down. Please come back another day. The system failed twice: it did not deliver my document and neither let me get my refund. It is clear then that the system, an otherwise considered black box, is central to my experience with the bank, both virtually and physically.

The experience of going to the bank in a city like Lima seems to exceed what could normally be attributed to two separate spaces, the virtual and the physical. Instead, the way I experienced "going" to the bank was more like a continuum in which the story unfolded. So I kept thinking about how urban design could plan better to improve this tiresome and almost never-ending experience? In what follows I will provide some insights about my experience of queuing to give you a flavour of what one might want to take into consideration.

It cannot be denied that we humans rely on technology to get things done. But at the same time, it is important to say that such technology



Fig. 1 – A woman walking away from the queue.

impacts on the shape of human societies (Latour, 1990). While queuing, I saw a myriad of things that made me reflect on how it has always been part of a Peruvian tradition of dealing with private and public institutions. This may also be the case in other countries. But what I am saying is that here it seems like nobody questions the existence of a queue. If sometimes somebody commented on how inefficient some institutions are it is rarely the case that the system is blamed. If it is a fault of the system, it is most likely somebody not doing their job properly. But it is never a problem of an otherwise “flawless and cold” system. Well, let me tell you how the system is pretty much a shaping actor in the experience of going to the bank in Lima and how my experience made me question the imaginary separation between nature and dwelling.

The queue was approximately forty people in a straight line that, aiming to respect social distancing, extended for around eighty meters. While I was walking to the end of the queue one of the bank members goes up and down the line informing people that the system is slow and so the waiting time is going to be longer than normal. Despite being the middle of summer and without proper protection from the sun – as we are standing outside the bank in an open public square – nobody seems to say anything, it seems like a normal thing to expect. Only a few, considering how daunting the task was, decided to leave the queue.



Fig. 2 – A few meters away from the bank’s entrance some people use the tree shadow to protect themselves from the sun while keep waiting in line.

Figure. 1 below shows precisely that moment.

Ten minutes into the queue a little girl dressed in typical Andean clothes offers candy but nobody even looked at her. After her, a person working to raise funds for a drug addiction campaign tries to sell lottery tickets. No one bought anything. Perhaps nobody had change and did not want to risk losing their position in the queue. After him an old person fell in a tray full of bleach - many buildings have started to use them for people to clean their shoes as a protection against Covid-19. Everybody looks at him but nobody seems to care. I wonder what would have happened if all of the people in the queue did not feel that we were each in a struggle of our own by queuing in the middle of summer under the burning sun. Perhaps if people would have had a better experience queuing maybe it would have made it more likely that somebody would help. However, losing your position

in the queue makes it not worth trying.

My experience of going to the bank in a city like Lima shows how united it is the separation between nature – non-human developed environment – and dwelling –human-built environment. I could see that the bank extended the space occupied by the queue. It went beyond the structural walls that support it and extended to the almost eighty meters long queue of which I was part, and the trees providing shade for the people in it, and the sun burning our bodies, and the complicated ways of computational systems that forced me to experience this. Figure 2 below shows how escaping from the sun under the tree is also part of the experience of going to the bank.

I think that all the people in the queue know that ‘going to the bank’ means dealing with these non-humans. That is why some prefer to go very



Fig. 3 – The bank security staff recommending costumers to come before the opening time if they want to avoid long queues.

early to avoid queuing, even before the bank opens to the public. At least that was the recommendation of one of the security staff to a client when she asked him what time the bank opens. The Figure 3 below shows precisely that moment.

The system – or the lack of it – makes human societies become ordered in certain ways. For example, queuing has developed some traditions around it. Some people make money by waiting in line for somebody else. While for some it is an opportunity, for some others it is the opposite. While we were waiting in line, a couple of parents with their children came and decided

to leave. Which made me wonder how single parents could queue with their little children? Perhaps for them, it is a challenging adventure and I wonder a better plan could be designed for people with little children? If we think about the bank not just as the physical space but also an extension of it constituted by all the people in the queue, perhaps a children's playground might be considered as part of the design of the bank?

The point here is that, as my experience demonstrates, going to the bank entails a story that reminds us about the broader cosmos. By this, I mean not only all the natural combinations observable

from a human perspective. This feature of the cosmos disrupts a purely scientific way of ordering the natural world. It aims to keep open the possibilities of new ways of listening to how nature and culture combine. This requires us to be cautious in our decision making and care more for threats to the existence of some actors; in the context of the climate crisis, this seems an obvious thing to do. From a postmodern/post-development approach this would mean adding multiplicity to a unified world of grand narratives. However, a cosmopolitical perspective understands that multiplicity is a property of the associations of humans and non-humans themselves, not of the humans that interpret things.

A cosmopolitical perspective arises from the idea that there are many ways of assembling the heterogeneous compositions of nature and culture. Hence the importance of maintaining a diplomatic perspective by which new assemblages can be considered valid actors. In my example, I presented how the technological actors and the virus have agency. They shape how humans experience and interact with space. The introduction of "the system" as an actor that nobody fully comprehends what it is or how it works makes the case for taking into consideration associations otherwise considered singularly as black boxes. Whatever constitutes the system is alive as its reactions do not follow a predictable outcome. It makes

me queue for hours and I am at its mercy. It might allow me to get what I need or not. Hence, it is important to think about the impact of non-humans in the use and experience of space thought of as a cosmos. That it is not private nor public space, nor does it fit within the classification of nature or dwelling. It is both at the same time and more. It is an interwoven connection of purposely imagined material, social and virtual bubbles.

REFLECTIONS

In this article, I have exemplified how non-human actors intervene in the production of human experience of the city of Lima. The interwoven nature of society and nature allows us to consider that urban design may benefit from a cosmopolitical approach. Some authors have proposed this before (Blok and Farias, 2016, Zaera-Polo and Yaneva, 2015). Hence what this article has tried to do is to provide a brief example to contribute and support a dialogue around it.

A network of non-human actors facilitates the fabrication of society, as most Peruvians know it. A country where leaving home for things that could be considered quotidian –like queuing for the bank – could become a source of adventure or even death – if we consider the number of Covid-19 cases that were connected with queues for the bank. Both technology and the virus effectively re-configure our experience and use of space. This approach expands the concept of dwelling – a

room, a building, a city – and makes it necessary to think about ‘common’ space from a cosmopolitical perspective. Doing so involves rethinking an imagined dichotomy of nature-dwelling.

To design under these conditions requires redefining what is commonly associated with nature and society. Nature is not a finite mix of non-human participants as represented by natural scientists. Society is not an exclusively human affair governed by politics and culture. Pursuing this line of thinking allows us to evaluate why we make a distinction between the built and natural environment. To me the question here is not who but how it is being built? This shift in the way of looking at things may help us to think more holistically about space.

But such a holistic approach would not be enough, because there is not a common ground where things have to be ordered. Hence, the real task here is to think about how to develop a conversation about the diversity that exists. This is one of the key tenets of cosmopolitics. It could be useful to think of this ‘common’ not as a given space but as an outcome. In a cosmopolitical approach, common space becomes the outcome of a process in which all the relevant actors in something that concerns them or matters are heard, and decisions are made acknowledging the positive and negative consequences that our decisions could have for each of them. To that end, the cosmopolitical project brings important conceptual

tools to be attentive to and to look for previously unknown assemblages.

An assemblage entails a politically wide description that deploys an accurate description of the complicated possibilities of concrete urban situations. As Rankin (2011) has discussed, assemblages remove the need to look for and explain through the underlying structures of neoliberal political economy that shape inequalities. This type of analysis would lead to me discussing the connections between, for example, the vaccine patent owners and the people queuing at the bank. While not denying there may be some connections, the task here is to trace such connections by observing how they hang together. The proposition for critical thinking here is to detect (not to reveal) ‘how many participants are gathered in a thing to make it exist and to maintain its existence’ (Latour, 2004c p. 246). The move it performs departs from the idea of facts into the building of such facts in a way that integrates new layers of evidence along with new types of participants. This does not mean to ‘get away from matters of facts but closer to them’ (Latour, 2004c p. 231).

This type of reasoning is justified in response to, and exemplified by, climate change deniers arguing how facts are produced to destroy hard-won evidence. Latour worries that disbelief in scientific facts – which he helped to promote by showing how these are constructed – has come to be used to produce conspiracy-like theories among some

critical studies. He argues that critical researchers, use similar procedures to that mobilised by conspiracy theorists in reaching their conclusions: first, they express disbelief about something, then they introduce several causes from 'deep dark below' to explain what they think is really going on. The argument Latour tries to bring forward is that a 'certain form of critical spirit has sent [academics] down the wrong path, encouraging us to fight the wrong enemies' (Latour, 2004c p. 231). This is relevant at this time when we have witnessed numerous conspiracy theories around the pandemic which have hampered the focus on crucial discussions and instead made us fight against each other (Goodman and Carmichael, 2020).

Based on his approach, critical thinking aims to stop neither studying how facts are produced nor to obliterate their power. His approach entails negating debunking as the ultimate goal of criticism. His criticism aims to keep exploring the many interactions among actors that make it possible for something to exist, including both matters of fact and matters of concern, broadly speaking, products of nature and politics, respectively.

As mentioned in the introduction to this article, a cosmopolitical approach investigates the conventions around the separation of nature and society. This requires undertaking a multi-perspective enquiry that sees objects of research as existing on one large continuum. Latour talks

about 'a multifarious inquiry launched with the tools of anthropology, philosophy, metaphysics, history, sociology to detect how many participants are gathered in a thing to make it exist and to maintain its existence' (Latour, 2004c p. 246). This entails also reconstructing our way of seeing how urban power relations and inequalities in the city relate. In a cosmopolitical approach, power is not a given, it is a consequence rather than a cause. Power requires to be explained through the interactions making it possible. The point here is not to disavow how things are assembled and the reality they convey. Instead, it aims to: 'show (and, through the analysis, participate in) how they become real in the layering and knotting of multiple concerns; this equally involves how they derealize as their assemblies scatter or turn contentious' (Blaser, 2016 p. 552). Hence, as Law (2009) puts it "class, nation-state, patriarchy become effects rather than explanatory foundations. This is not to say that they are not real – they may indeed be made real in practice – but they offer no framework for explanation" (p. 147). In this way instead of understanding politics in an already existing factual world, a cosmopolitical approach embraces new assemblages of human and non-human participants to explore "politics concerned with the processes through which a world is being brought into existence" (Blaser, 2016 p. 552).

However, in the process of reconstructing how a world is

being brought into existence, the actors and the narratives that could be considered as part of such a world is always contingent on the analytical ability, political will and ontological approach of the researcher, and also on the capacity of vulnerable actors to raise their voice. In this situation, there is a reasonable worry about not being able to account for the voice of vulnerable actors, which could disrupt the extractive oriented political economy and its ontological underpinnings. De la Cadena (2010) exposes a clear example of this by situating how sacred mountains are disavowed from participating in formal political discussions. Hence, some authors have argued to shift from the composition of a common world, to concentrate on differences. This approach is described as a way to identify ontological overlaps and to present and accept their differences without the subordination of either (De la Cadena, 2015, Blaser, 2016).

If we decide for this type of reasoning, I think we could do more for improving the experience of vulnerable populations. By this I mean the people who have been forced to face death by lining up to the bank. By this I also mean the number of non-human species who have been threatened by the expansion of human activities and, in an attempt to survive or pushed by human coercion, have started to mingle with pockets of humans in an interaction that may have lead us to the current pandemic situation (Sharun et al., 2021).

BIBLIOGRAPHY

BLASER, M. Is another Cosmopolitics Possible?. In: *Cultural Anthropology*. 2016, issue 4 (31), pp. 545-570. ISSN 0886-7356

BLOK, A. and I, FARIAS. (eds.) *Urban cosmopolitics: agencements, assemblies, atmospheres*. New York: Routledge. 2016. ISBN 9781138813410

De LA CADENA, M. *Indigenous Mestizos: the politics of race and culture in Cuzco, Peru, 1919-1991*. Durham: Duke UP. 2000. ISBN 978-0-8223-2420-1

De LA CADENA, M. 'Indigenous Cosmopolitics in the Andes: Conceptual Reflections beyond "Politics"', *Cultural Anthropology*. 2010, issue 25(2), pp. 334-370. ISSN 1548-1360

De LA CADENA, M. *Earth Beings: Ecologies of Practice across Andean Worlds: Ecologies of Practice across Andean Worlds*. Duke UP. 2015. ISBN 978-0-8223-5963-0

DESCOLA, P. All too human (still): A comment on Eduardo Kohn's How forest think. In: *HAU: Journal of Ethnographic Theory*. 2014, 4(2), pp. 267 - 273.

GOODMAN, J. and F, CARMICHAEL. *Coronavirus: Bill Gates 'microchip' conspiracy theory and other vaccine claims fact-checked: BBC Reality Check*. 2020 [Accessed: 28/03/2021]. Available at: <https://www.bbc.com/news/52847648>

ILO. *Lima's Gamarra market: The benefits of moving to the formal economy*. 2019. [Accessed: 28/03/2021]. Available at: https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_723278/lang--en/index.htm

JOHNS HOPKINS UNIVERSITY. *Mortality in the most affected countries*. 2021. [Accessed: 26/03/2021]. Available at: <https://coronavirus.jhu.edu/data/mortality>

LATOUR, B. 'Technology is Society Made Durable', *The Sociological Review*. 1990 38. pp. 103-132.

LATOUR, B. *Politics of nature : how to bring the sciences into democracy*. Cambridge, Mass: Harvard UP. 2004a. ISBN 9780674013476

LATOUR, B. *Whose cosmos, which cosmopolitics?: Comments on the Peace Terms of Ulrich Beck*. *Common knowledge*. 2004b, 10(3), pp. 450-462. ISSN:1538-4578

LATOUR, B. *Why Has Critique Run out of Steam? From Matters of Fact to Matters of Concern*. *Critical Inquiry*. 2004c, 30(2), pp. 225-48.

LATOUR, B. *Reassembling the social: an introduction to actor-network-theory*. Oxford: Oxford UP. 2005. ISBN: 0199256055

LAW, J. *Actor Network Theory and Material Semiotics*, in Turner, B.S. (ed.) *The new Blackwell companion to social theory*. London: Wiley Blackwell. 2009. ISBN: 978-1-405-16900-4

MATOS MAR, J. *Peru. Estado desbordado y sociedad nacional emergente*. Lima: U. Ricardo Palma. 2012. ISBN: 978-612-4059-54-4

PIGHÍ, P. *Cuarentena en Perú: 5 factores que explican por qué las medidas de confinamiento no impiden que sea el segundo país de América Latina con más casos de covid-19*: BBC News Mundo. 2020. [Accessed: 28/03/2021]. Available at: <https://www.bbc.com/mundo/noticias-america-latina-52748764>

RANKIN, K. N. 'Assemblage and the politics of thick description'. *City*. 2011. 15(5), pp. 563-569

SHARUN, K., R, TIWARI, S, NATESAN and K, DHAMA. *SARS-CoV-2. Infection in farmed minks, associated zoonotic concerns, and importance of the One Health approach during the ongoing COVID-19 pandemic*. *The Veterinary quarterly*. 2021. 41(1), pp. 50-60.

STENGERS, I. *Another Science is Possible: A Manifesto for Slow Science*. Polity Press. 2018. ISBN: 150952181X

TELLO, M. *La brecha digital en el Perú: Diagnostico, Acceso, Uso e Impactos*. Instituto Nacional de Estadística e Informática. 2019. [Accessed: 17/05/2021]. Available at: <https://departamento.pucp.edu.pe/economia/wp-content/uploads/Mario-Tello.-Brecha-digital.-INEI.pdf>

ZAERA-POLO, A. and A, YANEVA (eds.) *What Is Cosmopolitical Design? Design, Nature and the Built*

Environment. Routledge. 2015. ISBN: 9781138297081

ZAPATA, A. and R, ROJAS. *¿Desiguales desde siempre?: Miradas historias sobre la desigualdad*. Lima: Instituto de Estudios Peruanos. 2013. ISBN: 978-9972-51-445-6

ZIEGLER, G. and M, MORALES. *Lima lucha contra el coronavirus con aguas turbias: Ojo Público*. 2020 [Accessed: 28/03/2021]. Available at: <https://ojo-publico.com/especiales/lima-lucha-contra-coronavirus-con-agua-turbia/>