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COVID-19 pandemic and emotional contagion

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Abstract

This study will seek answers to a research question that aims to evaluate the patterns and the structure of pandemics and their spread in different ages and territories, always taking into account the COVID-19 pandemic: what is the significance and role of emotional contagion in how people behave during the current COVID-19 pandemic, and how do emotions spread across society from person to person, like viruses?

Our methodology is based on mapping previous experiences on how societies faced collapse due to epidemic outbreaks to answer this research question. Moreover, we present an autoethnography to revise moment by moment how professional and private lives are being affected by this pandemic right now.

Keywords

coronavirus; COVID-19; emotional contagion; collapse; pandemic

La pandemia de COVID-19 y el contagio emocional

Resumen

Este estudio buscará respuestas a una pregunta de investigación, dirigida a evaluar los patrones y la estructura de las pandemias y contagios en diferentes edades y territorios, siempre teniendo en cuenta la pandemia de COVID-19: ¿cuál es el significado y el papel del contagio emocional en cómo se comportan las personas durante la actual pandemia de COVID-19, y cómo se propagan las emociones en toda la sociedad de personas a personas como los virus?

Para responder a esta pregunta de investigación, nuestra metodología se basa en un mapeo de experiencias previas sobre cómo las sociedades enfrentaron el colapso debido a brotes epidémicos. Además, presentamos una autoetnografía para revisar momento a momento cómo la vida profesional y privada se está viendo afectada por esta pandemia en estos momentos.

Palabras clave

coronavirus; COVID-19; contagio emocional; colapso; pandemia

Introduction

In January 2020, a new type of virus belonging to the *Coronaviridae* family, currently called COVID-19, was identified as the cause of an outbreak, with tens of thousands of cases and relevant associated mortality, in Wuhan, the capital of the Hubei Province in China (Xie *et al.*, 2020). It was later declared a Public Health Emergency. As stated by the World Health Organization on March 11, the outbreak of COVID-19 turned into a pandemic. The spread of the disease was becoming unstoppable and had already reached the necessary epidemiological criteria for being called a pandemic, having infected more than 1,400,000 people in 195 countries.¹ Nowadays, the COVID-19 pandemic is still creating a global health emergency. The challenge is complex, and many measures have been implemented to avoid social collapse.

The pandemic is rapidly changing social life across the world. In the beginning, there were no vaccines, so lockdown was the only way to avoid getting infected.² Governments around the globe were dictating laws and imposing a state of emergency to guarantee lockdown, imposing strict conditions of behavior for those living in their territories. Therefore, everyday habits and practices taken for granted are either being altered in multiple ways or just halted altogether. Simultaneously, new social modes are being created in and throughout the new social situations constantly coming into existence. People are responding in multiple ways – involving emotions and creativity – to live in times of pandemics. As some previous possibilities are closed down, new ones may now open up, perhaps with far-reaching but unpredictable effects.

This work introduces the historical context and collapse study in social research. We need to further develop the study of interpersonal cognitive processes and emotions. This would come naturally, assuming that a conversation is an essential medium of cognition and memory (Belli, Aceros, & Harré, 2016). Suppose there are differences in the organization of the brains between those who live

mainly in a collective psychological context and those of loners. In that case, this may be only of passing interest since the key studies have already been situated in collective contexts. Over the centuries, we have generated a sequence of “psychologies” that require interpretation because the ways of thinking, language, and other symbolic means are ever-changing.

This study will seek answers to our research question (RQ), aimed at evaluating the patterns and the structure of pandemics and their spread in different ages and territories, always considering the COVID-19 pandemic:

RQ: what is the significance and role of emotional contagion in how people behave during the current Covid-19 pandemic, and how do emotions spread across society from person to person, like viruses?

To answer this research question, our methodology is based on mapping previous experiences analyzed by social science and history on how societies faced possible collapse due to epidemic outbreaks. Moreover, we present an autoethnography to revise moment by moment how professional and private lives are being affected by this pandemic right now.

In this paper, we have decided to gather data from our daily experience as isolated subjects in our homes, affected by emotions from other people that live outside our physical spaces. Many times, we connect with them thanks to digital media. This paper was written in the total isolation caused by the Coronavirus pandemic, using digital tools to communicate between authors, and analyzing emotions and contagion from media and through media.

As Chiu *et al.* (2004) explain, infectious diseases have always threatened humans, especially when social conditions are continuously changing. Epidemics such as the bubonic plague, AIDS, Ebola, SARS, and now the coronavirus have seriously affected human beings. Emotional contagion during an epidemic outbreak is also known from ancient times. One of the most famous examples took place in Athens in 430 BC. At that time, an unknown illness causing

1. <https://www.worldometers.info/coronavirus/> [Accessed: 08-04-2020].

2. Nowadays, the European Medicine Agency (EMA) has approved the use of the vaccines made by Pfizer (21 December 2021), Moderna (6 January 2021), and Janssen (11 March 2021). The use of the Oxford-Astrazeneca vaccine, although authorized on 29 January 2021, was stopped around 15 March, by some EU countries such as Italy and Spain, as possible secondary effects are still under study.

a hemorrhagic fever killed around one third of the population of Athens (Morens & Littman, 1992). The historian Thucydides made a detailed description of the situation. For the author, the moral and emotional consequences were even worse than the physical effects. Without hope and surrounded only by death, with piles of unburied corpses filling the city, people began to act without respect for civil law or the Gods (2.53). Moreover, Thucydides highlights that the pandemic was especially hard on the physicians and people who took care of their sick relatives: they tried to help, but invariably they fell ill as well and died. This was the worst aspect of the plague, and for this reason many people died alone (2.51). It is to be noted that the onset of the first episode of the plague was during the march of the Spartans along the Attic territory. The proximity of the enemy army, almost at the city walls, only worsened the feeling of closeness to total collapse. The experience of something that has never happened before is present in another fact. Whereas Athenian deaths in battle were honored and commemorated, the silence about the plague and lack of memorials for these deaths did not allow to create an "Athenian collective memory" for this episode. This fact could have materialized as a collective trauma where only the individual experience survived (Colclough, 2019). What happened there is a typical case of emotional contagion. Firstly, we will consider how it happens, and then, we will analyze the emotional contagion of our own experience during the 2020 lockdown.

1. Emotional contagion

The complexity of studying emotions comes from taking our own experience as a rich source of data (Belli & Broncano, 2017). We agree with Harré (2000) that language is the main instrument through which such creations and modifications come to be. The experiences of our lives are fundamentally perspectival, and can deeply distort reality, truth, objectivity, and our ideas of what it is to be a person (Goldie, 2012).

Emotional contagion can occur at more conscious levels, including social comparison processes in which people evaluate their emotions compared to others and respond with what seems appropriate in the setting (Adelmann & Zajonc, 1989; Barsade, 2002, 2018; Schachter, 1959; Sullins, 1991). Moreover, people can intentionally influence others with their emotions, engaging in an "affective impression management" (Kelly & Barsade, 2001). Therefore, emotions have a powerful influence on organizationally relevant perceptions and judgments (Barsade & Gibson, 2007).

But what about unconscious influences and emotional contagions? People also influence each other unintentionally with their emotions, without intending to do so and possibly even unknowingly. Gabriel Tarde has provided a useful analytical distinction with regard to intentional and non-intentional influencing in his book *The Laws of Imitation* (1903). For Tarde, we might not be able to document every kind of influence that people have on others through imitation and contamination. Still, we can document it from their narratives and experiences. It should be clear that imitation and contamination, denoting general products and processes of repetition in the social world, are only acts that are socially learned through observation and then performed (Marsden, 2000). Tarde (1903) noted a general shift in the mode of social reproduction of

customs, i.e., epidemic and endemic horizontal transmission, where society is always imitating. Pondering the flow of influence and emotional contagion in society leads to wonder whether Tarde's "imitation" is as far off as it sounds (Katz, 2006). For Katz (2006), there is good reason to think of imitation as one of the forms that influence may take. Consider decisions where an influencee may imitate some piece of an influencer's attire or behavior without the influencer's knowledge. Influence may have transpired even when both parties are unaware of their roles, calling this "contagion" in the same way that epidemiologists do.

The transfer of emotions via emotional contagion impacts personal perceptions. Parkinson and Simons (2012) found that anxiety and excitement of people to whom the subjects of their study were close significantly influenced their focal perceptions of decisions risks. The importance, for example, of staying at home to fight the pandemic is perceived differently by citizens over time. Firstly, it was viewed as an exaggeration, and later as a responsibility. Some people acted as watchmen-even insulting passengers from their windows and balconies; most of the time they were health workers or parents with ASD children.

In this pandemic, emotional contagion can impact broader outcomes such as political decisions in different stages. Erisen, Lodge, and Taber (2014) tested and found evidence of emotional contagion affecting individuals' policy evaluations and subsequent political decisions. Their theory of motivated political reasoning suggests that emotions caught in the early stages of informational processing have a significant influence on the evaluation and subsequent support or rejection of political policies. Specifically, the emotion passed on to the evaluators of policies led them to make emotion-congruent evaluations and decisions. Given the current political landscape, future studies must gauge a better understanding of the effective decision-making drivers concerning public policy (Barsade *et al.*, 2018).

Emotional dependence and interdependence among human beings moves according to emotional patterns of indifference in this pandemic. From "the virus is something that does not affect my life" to curiosity about what happens in other places and fear of the virus and its management of the crisis and death (Díez, Belli & Márquez, 2020). The progression of these emotional dependences and interdependences is also related to the development and establishment of responsible behavior patterns among citizens. Individuals redefine social reality in emotional terms to face fear and uncertainty with regard to the unknown, on this occasion, developing social patterns of behavior that mainly emphasize co-responsibility, solidarity, and civic culture (Díez García & Laraña, 2017).

Scientists have found that individuals generally respond differently to positive and negative emotional stimuli (Barsade *et al.*, 2018). Adverse events like a pandemic are thought to generate quicker and more powerful emotional, behavioral, and cognitive responses than neutral or positive events (Cacioppo, Gardner & Berntson, 1997; Rozin & Royzman, 2001). This is observed, e.g., in the Athenian epidemic. In accordance with the motivated cognitive processing theory (Clark & Isen, 1982), which proposes that people may be motivated to stay in a positive affective state, although there may be situations in which people instinctively focus more on positive emotions avoiding the void of negative ones.

Kramer *et al.* (2014) argue that emotions can be transferred to others via emotional contagion, leading people to experience the

same emotions without their awareness. Social media and social networks, digital platforms that facilitate information-sharing, user-created content, and collaboration among people (Elefant, 2011; McFarland & Ployhart, 2015), are especially significant in this context. As key conversations and tasks are increasingly carried out virtually, scholars have begun to explore whether emotional contagion can occur without physical co-location (in many instances, through text-based interaction only) (Barsade *et al.* 2018). While research in this domain is still relatively nascent, extensive work suggests that emotions can spread virtually, both among teams and more broadly across entire social networking platforms (Cheshin *et al.*, 2011; Del Vicario *et al.*, 2016; Ferrara & Yang, 2015; Kramer *et al.*, 2014).

Another societal phenomenon that is likely influenced by emotional contagion is the tendency for individuals to expose themselves to information that reinforces their existing views, which contributes to an apparent “echo chamber” within the press and social media (Barberá, Jost, Nagler, Tucker & Bonneau, 2015; Garrett, 2009). This is because the emotions expressed on these platforms likely lead to increased partisanship and division, as different groups are often bombarded with vastly different sets of emotions regarding the same event (Barsade *et al.*, 2018). For this reason, emotional contagion increases division, due to varying feelings of, e.g., collective rage, joy or relief, shared among the different sub-groups (and media echo chambers) to which the person belongs. Studies have focused on the social transmission of emotions and behavior across large societal social networks (Bastiampillai, Allison & Chan, 2013). This study illustrated how negative emotions spread through intimate contacts with friends and families, a dynamic process that leads to the clustering of people in positive and negative emotions in groups within networks (Fowler & Christakis, 2008). Social media connects the users' emotions and influences them (Saldias & Picard, 2019).

For Remuzzi & Remuzzi (2020), the system's capacity to respond to changing circumstances has been under enormous pressure. In this scenario of a new pandemic, doctors and nurses are modern heroes in an unexpected war against a problematic enemy (Remuzzi & Remuzzi, 2020). In European countries, rather than revising the Schengen visa-free zone, the most effective way to contain this viral outbreak, Remuzzi & Remuzzi (2020) explain, is to avoid close contact at the individual level and through social meetings in each country. In other words, confinement. This is why, while we are writing this paper, we are confined in our houses in Madrid and Bergamo for several days. In the work sphere, the political decisions were to suspend activities in the workplace, replacing them with private spaces in our own homes. Smart working and digital activities are key to continue developing our work. All levels of the educational system follow the same rules, so young people continue to learn from their homes. Physical proximity is a medical issue in a pandemic situation, but also an emotional one. Fear of other people is also a product of these political decisions. Emotional contagion, in this case, consists in avoiding any kind of social context with the rest of the people around us. Social resilience appears as a new way to resist in this new context.

It is a pity that Zygmunt Bauman did not study this pandemic, because context his conception and definition of liquid fear (2013) could be adapted to current contexts. The diffuse, dispersed, unclear fear that Bauman speaks of is the fear that we are living in

these times. A fear floats free, without ties, anchors, and a home to use the sociologist's words. Fear is also the name we give our ignorance regarding the threat and what needs to be done to stop it. The liquid modern world that Bauman (2013) presents us with is one that only admits a single certainty, which involves a daily trial of disappearance and erasure. It is an artifact that aims to suppress the horror of danger, but the virus has been able to destroy this almost perfect device. According to the Polish sociologist, if life is liquid flowing slowly from one challenge to another, between the millenium bug and the mad cow disease, it has finally encountered a really powerful enemy. People are infected by a virus and fear, a viral logic of how emotions may spread across populations and between people.

2. Methodology

As we stated, our methodology is based on mapping previous experiences of epidemic outbreaks, how societies faced them and how they dealt with the feeling that ordinary life could disappear. We present an autoethnography to revise moment by moment how professional and private lives are being affected by this pandemic right now.

We have started to gather data responding to these questions at the start of the pandemic in March 2020: how has daily life been for us? How has the pandemic affected my professional and private lives been affected or changed?

By autoethnography, we understand a research and writing approach that allows accommodating both personal and autobiographical accounts as well as the experiences of the ethnographer as a researcher placed in a social and cultural context (Blanco, 2012). For Ellis *et al.* (2011), autoethnography recognizes and gives rise to subjectivity, emotionality, and the researcher's influence in his work, without hiding these questions. In this sense, we also appeal to ethnographic reflexivity, which considers the researcher himself part of the world he studies (Guber, 2011). Our methodology is similar to Jandrić *et al.*'s work (2020). In this research, there are some collective articles published in which academics reflect their private and professional experiences and feelings with regard to the COVID-19 crisis.

In the next section, we share some first reflections on our daily experience as isolated subjects in our homes but affected by the discourses and emotions of other people who live outside our physical spaces. The resulting document was written in total isolation caused by the coronavirus pandemic, using screens and digital tools such as forms of communication, reflexivity, and analysis.

3. From the focus of the last pandemic: the case of Madrid (Spain) and Bergamo (Italy)

In the first weeks of the pandemic, European cities were the most affected by the coronavirus. Firstly, Lombardia in the north of Italy,

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with the city of Bergamo at the core of the contagion, followed by Madrid, the capital of Spain. As we are two academics with families in these respective cities, we have noted how similar patterns have emerged in several moments of the pandemics.

The emotional contagion between citizens in these two cities has followed these emotional patterns. In the beginning, we felt indifference ("the virus is something that does not affect my life") and curiosity about what happened in the distant Wuhan. We even made jokes and memes. The Media often compared the illness with the influenza, attenuating the feeling that we were dealing with something unknown and highly dangerous.

Our general perception changed when the first cases broke out in Bergamo and Madrid. Similar cultural context and geographical proximity have favored the awareness that something urgent and dangerous has arrived in our cities. This is the start of the emotional contagion, as it implies that interacting people tend to learn from each other about existing behavioral possibilities (Mark, 1988), such as being infected by a virus. The emotional contagion also implies making similar choices or conforming to the group (Cohen, 1978). And of course, the possibility of replicating each other's choices, like deciding to work from home or not going out to dinner at that restaurant.

Feelings moved to incomprehension and negation when the outbreak happened in our places. The progress of infections and its effects on health made COVID-19 apparent in our lives, especially when people who were part of our closest environment, the primary social groups, began to show symptoms, get sick and end up calling a doctor or going to the hospital. However, the turning point was at the beginning of the total lockdown on 9 March in Italy and 15 March in Spain. Our perception of the disease changed quickly and completely, as our lifestyle was deeply affected. For the first time, we felt that the collapse was almost here. Immediately after, new feelings grew, such as a sense of responsibility towards our loved ones and ourselves. Moreover, we began to worry about communal behavior. The messages "stay at home", "wash your hands" or "keep social distance" left a deep mark on us. At that moment, we also trusted society and institutions beyond doubt. We idealized professionals, especially Health system workers, thinking that they were superheroes that could face a pandemic whatever the outcome. However, the most dominant feeling was fear of falling ill ourselves or our relatives. Fear was transmitted in the media, on social networks and by our friends and families. The rising number of infected people and deaths spread this fear, fostered by the situation of total isolation. On 19 March, military trucks carried dozens of corpses out of the city of Bergamo for their cremation in other cities, as it was impossible for the city's funerary services to deal with the overload. The images went around the world, generating panic: the sophisticated north of Italy was on the brink of collapse. Furthermore, anxiety for the economy, as millions of jobs were being destroyed, was very common too.

During these days, we also faced a new and communal feeling: the devastation provoked by the lonely dying of those infected and the absence of mourning the deceased due to the pandemic. Among isolated people, a kind of cognitive-emotional redefinition of the situation that prepares them to face illness and death emotionally,

e.g., resilience. However, this was not enough to prevent this devastation, as it was produced by an experience almost unknown in our modern and welfare societies, which also has negative connotations (Nelson-Becker & Victor, 2020).

Grief is a narrative and social process that society helps us to process. But in this situation, people were completely alone. When a beloved one got sick, you called the ambulance, and they took him or her to the hospital. You only received one quick call each day. Then, things got complicated, and that person died alone. You questioned how that person died, if he or she was completely alone or died in pain, etc. You were not able to follow this process, as visits to hospitals were forbidden. The hospital called you to pick up his or her personal belongings. One woman, whose 89-years old father was at the 12 de Octubre Hospital and finally died there on the 28 March, told us that first she was afraid that he might think that she was not with him because she did not want to be. Shortly after, as news became worse, she prayed that he would die soon so he did not have to be alone anymore.

Moreover, during these days, no wakes were allowed. People received news of the deaths of their relatives alone at their homes and could only receive the coffin or collect the ashes for burial with a maximum of three attendants. Sometimes, they transferred the body to another city for cremation. In Madrid and Bergamo, deaths were taken to other regions for cremation, which caused suspicion among relatives when they received the urns. They could not stop wondering if the ashes were the correct ones. And we were at home alone, isolated. Two days before, this person was there with you, and then no longer. More than feeling the loss for the death of our loved ones, we felt that they had disappeared, experiencing that deep pain caused by the absence of grief. The anxiety, psychological pain, fear, and loneliness that this causes can be summed up in devastation. Although this is still happening, wakes are allowed now and you can meet, with restrictions, your friends and relatives. However, at that moment, these feelings stayed with individuals as they were in lockdown. We were trapped in our houses. We could not communicate our pain according to the traditional channels (talking to our friends, having coffee at the mortuary, for example). In this case, for many people who were suffering, feeling that other people shared their loss was healing, as it relieved the absence of proper mourning. Just a phone call from a relative and the opportunity of crying together, even at a distance, proved to be emotionally beneficial, as we feel in our own families.

However, mourning is a process made up of different emotions and stages (Goldie, 2012). It is not just one emotion, there are many complex emotions. We need the full support of society. Spain and Italy are still losing many lives. An entire generation was lost between March and April 2020. Spain and Italy are still losing many lives. For this reason, the process must be social. This emotional side of the pandemic will have lasting consequences, perhaps even more profound than that of the economic crisis, as money and jobs can come back but not the people you suddenly lost. We will have to work hard on a massive emotional recovery.

Then, emotions for the day after are highly important. Responsibility and trust in society will be fundamental. At the time, this

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meant staying at home. But we left this stage, living with more commitment and with another vision of society. These days, we truly value what is important and necessary and what is not.

Mourning will be the next emotional stage. This emotion may be for the deceased people we know or not, but this is a feeling that we can hardly express.

In this first phase of the pandemic, we have observed how digital social networks facilitate, via screens, the exchange of information and emotions between people who are physically isolated (Díez, Belli & Marquez, 2020). Emotions can spread virtually and can be transferred to others through emotional contagion, which leads people to experience the same emotions, or to typify emotional patterns, without being very aware of it. We know now that there is a global problem and the only way to survive is for everyone to stay home. Let everyone take responsibility and stay at home. Trust institutions, politicians, and public health professionals again. A society infected with responsibility is the key to combating this contagion.

Discussion

There is an emotional contagion because people from different parts of the world are facing the same problem: a pandemic caused by the COVID-19 virus. We have also noted that emotions towards contagions are similar across the ages and civilizations. The degree could depend on the development of public policies. However, pandemic history shows that, beyond individual loss, society prevails. This trust guides our emotions. Trust is not only needed to gain access to knowledge, but it is also essential to becoming a socially situated self. In our study, it is internalized through social practices like support and cooperation. Without trust, the subject feels negative emotions (fear, panic, anxiety, and depression) and loses perspective.

Although trust is fundamental to the construction of social ties, we still need to understand how they work or how to figure out their nuances and distinctions in contexts where collapse is felt close. Trust contributes to narrowing the horizons of the expectable so our social life becomes possible. The construction and maintenance of hope cause proactive emotional contagion.

In China, there is a social phenomenon called *guanxi*: "an intricate and pervasive relationship network which Chinese cultivate energetically, subtly, and imaginatively" (Sennett 2012, p. 135). This means to trust in social relations and networks, and fellowship bonds. For instance, a Chinese person newly arrived in a foreign city feels free to call cousins and friends to help him look for a job and somewhere to sleep. This informal cohesion is composed of a dialogic exchange, a negotiated process based on epistemic trust. To trust others is not the main purpose of this *guanxi* relationship but to obtain information and knowledge to live in a new context. Responsibility emerges from a reciprocal understanding of a circumstance as a situation in which the person involved is answering to the emotional needs manifested by others (Belli & Broncano, 2017).

Regarding our initial research question, emotion patterns have changed over time. Firstly, indifference and curiosity. When the outbreak happens in our hometown, we experiment disbelief and negation. Suddenly, sadness settles in. Uncertainty as well, as we now know what to expect or when it will end and how this crisis will affect our future life, e.g., our jobs. Uncertainty also affects our personal relations. Although we are connected with friends and relatives and can meet them with restrictions,³ we do not know when we will meet again as before. In this context, one of the most powerful emotions, spread to the entire population, is the suspended mourning. For many generations, it is the first time they feel that collapse is close. However, we do not suffer the Athenian delirium. Precisely, historical examples prevent overcoming by panic. We suffer physical and psychological pain, but we know that society will prevail. There is a world to come back to after. And if we want to do so, we have to protect ourselves and our beloved ones' health. Hope can also cause an emotional contagion that protects us from personal collapse. Trust as an emotion is fundamental, in ourselves and in our institutions. As we have seen, this is especially relevant when speaking about Health system workers, who have become social heroes.

With the COVID-19 pandemic, our perception of time has been modified. The common experience of time has changed. Nowadays, it is dictated by governmental laws and data about the evolution of the illness. Emotions that we do not normally have lead to real fear for our friends and relatives and to devastation due to the absence of mourning. Moreover, these exceptional situations unveil resilience attributes previously unknown to all of us. This is what we call "pandemic time", a concept we will develop in further studies.

When we wrote the draft of this paper, we had just overcome the pandemic peak during the first terrible wave, as the curve plateaued and began to go slightly down. This stage matched our hardest confinement, in which all activity not intended for basic production, was stopped. We wrote that "This is hopeful news in a complex emotional context where the explosive nature of the pandemic and the overall consequences have overwhelmed all of us. Scientific models, historical examples and contemporary Wuhan, which will reopen on 8 April, a day before these lines are being written, show that the situation will be controlled between the middle and the end of May. A horizon begins to appear, not far in time."

We couldn't have imagined how quickly our words would become true. From September 2020 onwards, Italy and Spain have experienced successive and terrible waves contained with different measures. Italy chose to impose short lockdowns, as well as social restrictions, whereas Spain resisted this method. Some Spanish regions had imposed different restrictions on social life. Nowadays, Italy is facing a new wave, which also seems to be starting in Spain. Bergamo is under lockdown. In Madrid, there are only restrictions to social life. But we will evaluate how we answer emotionally to this final challenge.

3. However, at the time we are writing this, another total lockdown has been imposed in Bergamo until the 5 April. It will also work for all Italy from April 3 to 5.

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Compliance with ethical standards

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