

Natural Disasters and Humanity #1

If any city _____ a time capsule, it is Pompeii. In AD 79, at the very height of its prosperity, the city suddenly _____. Mount Vesuvius, towering the north of the city, had erupted. Pompeii was buried under the falling ash, along with some 2,000 of its residents. For over a millennium, the city _____. When it was rediscovered in the 18th century, the beauty of artifacts excavated from the earth _____. Because volcanic deposits _____, the buildings, paintings, and artifacts were _____. On the walls of the buildings remain everything from beautiful frescoes to election notices, price lists in taverns, and lovers' graffiti declaring love, _____ the culture and daily life of the people of the Roman Empire. But the historical significance of Pompeii _____. The eruption of Mount Vesuvius is one of the earliest large-scale natural disasters for which a _____ survives. From the far shore of the bay of Naples, the writer and statesman Pliny the Younger witnessed the disaster _____. In letters to his friend Tacitus, he describes the disaster _____, which allows geologists today to reconstruct the course of the eruption _____. Natural disasters mercilessly take lives and _____. Yet each disaster has also _____, _____ one step at a time. How do Homo sapiens behave _____? How has humanity faced natural disasters throughout history?

If any city deserves to be called a time capsule, it is Pompeii. In AD 79, at the very height of its prosperity, the city suddenly vanished from history. Mount Vesuvius, towering the north of the city, had erupted. Pompeii was buried under the falling ash, along with some 2,000 of its residents. For over a millennium, the city lay all but forgotten. When it was rediscovered in the 18th century, the beauty of artifacts excavated from the earth astonished the world. Because volcanic deposits absorb moisture, the buildings, paintings, and artifacts were remarkably well preserved. On the walls of the buildings remain everything from beautiful frescoes to election notices, price lists in taverns, and lovers' graffiti declaring love, vividly conveying the culture and daily life of the people of the Roman Empire. But the historical significance of Pompeii does not end there. The eruption of Mount Vesuvius is one of the earliest large-scale natural disasters for which a detailed written record survives. From the far shore of the bay of Naples, the writer and statesman Pliny the Younger witnessed the disaster with his own eyes. In letters to his friend Tacitus, he describes the disaster in vivid detail, which allows geologists today to reconstruct the course of the eruption with great precision. Natural disasters mercilessly take lives and destroy livelihoods. Yet each disaster has also taught humanity something, moving us forward one step at a time. How do Homo sapiens behave when disaster strikes? How has humanity faced natural disasters throughout history?

all but	ほとんど～も同然で	statesman	政治家、為政者
mercilessly	容赦なく	reconstruct	再現する、復元する
deposit	堆積物	artifact	遺物、工芸品
excavate	発掘する	prosperity	繁栄
millennium	千年	moisture	水分、湿気
livelihood	生計	witness	目撃する

Natural Disasters and Humanity #2

Researchers estimate that Mount Vesuvius erupted at around one o'clock in the afternoon. The eruption column rose tens of kilometers into the sky, and the volcanic ash _____, a type now known as a "Plinian eruption." Pliny the Younger recorded that the area was _____ deeper than any night. The lava thrown into the sky cooled and solidified in the air, _____ as volcanic stones of all sizes. Many residents _____, but some chose to stay in their houses, at least for the first night. Since their houses _____ the falling stones, it is no wonder that staying home seemed _____. Around midnight, however, the eruption _____. As the column grew larger, denser, and heavier, it eventually reached a point where it could no longer _____ and _____. Rock and ash mixed with superheated gases—reaching temperatures of up to 500 degrees Celsius—formed a _____ that _____ at 160 kilometers per hour and engulfed the town below. Volcanologists call this phenomenon a pyroclastic flow, or pyroclastic surge. In Pompeii, an estimated 2,000 residents who _____ were killed by the pyroclastic surge. In Herculaneum, another town at the foot of the volcano, excavators have found the skeletons of some 300 people _____ along the shore. Against a storm of superheated gases, no building could _____. In fact, the decision of whether or not to evacuate is _____ it might seem. To begin with, people are _____ unless they are convinced that it is the safer choice. Generally, people tend to _____ of a disaster. What is more, if they have concerns about dangers along the way, or the conditions at evacuation shelters, those concerns _____ evacuating. Finally, evacuation is often _____. Social factors, such as how other people are behaving, can either _____ evacuation. The 2011 Tōhoku earthquake offers a telling example. Of 870 people surveyed afterward, more than 60 percent said that they began evacuating _____ the shaking stopped, _____. Many of them expected a tsunami to strike within 20 minutes, and more than half had _____ local disaster drills. And in the hardest-hit Sanriku coast, an old teaching had been _____: _____; save your own life, and _____, not even for family. Harsh as it sounds, the teaching increases _____ — including that of one's family. Many lives were no doubt saved by such knowledge of disasters and by _____.

Researchers estimate that Mount Vesuvius erupted at around one o'clock in the afternoon. The eruption column rose tens of kilometers into the sky, and the volcanic ash blotted out the sun, a type now known as a "Plinian eruption." Pliny the Younger recorded that the area was plunged into a darkness deeper than any night. The lava thrown into the sky cooled and solidified in the air, raining down on the ground as volcanic stones of all sizes. Many residents evacuated the city, but some chose to stay in their houses, at least for the first night. Since their houses offered protection from the falling stones, it is no wonder that staying home seemed a plausible choice. Around midnight, however, the eruption entered its second phase. As the column grew larger, denser, and heavier, it eventually reached a point where it could no longer support its own weight and began to collapse. Rock and ash mixed with superheated gases—reaching temperatures of up to 500 degrees Celsius—formed a devastating avalanche that raced down the mountain at 160 kilometers per hour and engulfed the town below. Volcanologists call this phenomenon a pyroclastic flow, or pyroclastic surge. In Pompeii, an estimated 2,000 residents who had not evacuated were killed by the pyroclastic surge. In Herculaneum, another town at the foot of the volcano, excavators have found the skeletons of some 300 people huddled in bathhouses along the shore. Against a storm of superheated gases, no building could offer real protection. In fact, the decision of whether or not to evacuate is far more complex than it might seem. To begin with, people are unlikely to evacuate unless they are convinced that it is the safer choice. Generally, people tend to underestimate the risk of a disaster. What is more, if they have concerns about dangers along the way, or the conditions at evacuation shelters, those concerns hold them back from evacuating. Finally, evacuation is often a collective act. Social factors, such as how other people are behaving, can either encourage or delay evacuation. The 2011 Tōhoku earthquake offers a telling example. Of 870 people surveyed afterward, more than 60 percent said that they began evacuating as soon as the shaking stopped, fearing a tsunami. Many of them expected a tsunami to strike within 20 minutes, and more than half had taken part in local disaster drills. And in the hardest-hit Sanriku coast, an old teaching had been handed down: flee independently; save your own life, and do not look back, not even for family. Harsh as it sounds, the teaching increases the likelihood of survival — including that of one's family. Many lives were no doubt saved by such knowledge of disasters and by a culture of preparedness.

pyroclastic flow	火砕流	engulf	飲み込む
blot out	覆い隠す	avalanche	雪崩
plunge A into B	AをBに陥れる	preparedness	備え
plausible	もっともらしい、理にかなった	hand down	(教えなどを) 伝える
huddle	身を寄せ合う	underestimate	過小評価する
solidify	固まる	collective	集団的な

Natural Disasters and Humanity #3

Scholars _____ the date of the eruption: August 24, AD 79, or a date late in October of the same year. If it was August 24, the eruption _____ came the day after Vulcanalia, a festival honoring Vulcan, the god of fire. To the Romans, a volcanic eruption was a sign that Vulcan was angry, so they held a feast annually on August 23 to _____. Needless to say, the festival _____ the eruption. Magma generated by the movement of tectonic plates _____, and the internal pressure simply _____ on a particular day in AD 79. But explanations of this kind _____ the human mind. They _____: why them, and why us? Some Jewish and Christian texts explained the eruption as _____ the Roman sack of Jerusalem nine years earlier. The Bible had long tended to present natural disasters as signs of God's displeasure with humanity. In Genesis, for example, the people of Sodom and Gomorrah _____ homosexual and immoral acts. In a fit of divine petulance, God rains fire and brimstone on these two cities. Just two months before the eruption, Titus, the very general who had _____ Jerusalem, had become emperor. To many, the story of divine punishment must have simply _____. A similar case is also seen in the 1755 Lisbon earthquake. At the time, Europe was divided by the conflict between Catholics and Protestants. The Protestant Dutch government refused Lisbon's _____, calling the earthquake God's punishment on Catholics for their alleged idolatry. Again, human actions _____ an earthquake: it happens when the strain of shifting tectonic plates, accumulated over centuries, is released in one sudden movement. On geological scales, earthquakes are almost regular, but on the scale of a human life, their timing and intensity are _____, and modern science cannot predict them. Throughout the 20th century, scientists _____ of earthquake prediction, but it has _____ that it is, in fact, impossible. Even Japan, one of the most earthquake-prone countries in the world, has _____ since 2003 from disaster prediction to _____. Yet those who cannot accept the fact that natural disasters lie _____ often _____ or invent some plausible explanation. Even today, seismologists are said to receive _____ dubious letters from people claiming to have predicted earthquakes—through fortune telling, or changes in their own physical condition. Annoying seismologists is, perhaps, a _____. But at times, the blame _____ people of a different race, nationality, or religion, as it did after the Great Kanto earthquake of 1923, or Hurricane Katrina in 2005. Disasters are threats not only to our survival, but to _____.

Scholars are divided over the date of the eruption: August 24, AD 79, or a date late in October of the same year. If it was August 24, the eruption ironically came the day after Vulcanalia, a festival honoring Vulcan, the god of fire. To the Romans, a volcanic eruption was a sign that Vulcan was angry, so they held a feast annually on August 23 to keep the god appeased. Needless to say, the festival had nothing to do with the eruption. Magma generated by the movement of tectonic plates had been accumulating, and the internal pressure simply reached its limit on a particular day in AD 79. But explanations of this kind rarely satisfy the human mind. They cannot help asking: why them, and why us? Some Jewish and Christian texts explained the eruption as punishment for the Roman sack of Jerusalem nine years earlier. The Bible had long tended to present natural disasters as signs of God's displeasure with humanity. In Genesis, for example, the people of Sodom and Gomorrah indulge in homosexual and immoral acts. In a fit of divine petulance, God rains fire and brimstone on these two cities. Just two months before the eruption, Titus, the very general who had laid siege to Jerusalem, had become emperor. To many, the story of divine punishment must have simply felt right. A similar case is also seen in the 1755 Lisbon earthquake. At the time, Europe was divided by the conflict between Catholics and Protestants. The Protestant Dutch government refused Lisbon's request for aid, calling the earthquake God's punishment on Catholics for their alleged idolatry. Again, human actions have nothing to do with an earthquake: it happens when the strain of shifting tectonic plates, accumulated over centuries, is released in one sudden movement. On geological scales, earthquakes are almost regular, but on the scale of a human life, their timing and intensity are matters of chance, and modern science cannot predict them. Throughout the 20th century, scientists pursued the dream of earthquake prediction, but it has gradually become clear that it is, in fact, impossible. Even Japan, one of the most earthquake-prone countries in the world, has shifted its policy since 2003 from disaster prediction to disaster mitigation. Yet those who cannot accept the fact that natural disasters lie beyond our prediction and control often blame someone or invent some plausible explanation. Even today, seismologists are said to receive a depressing number of dubious letters from people claiming to have predicted earthquakes—through fortune telling, or changes in their own physical condition. Annoying seismologists is, perhaps, a harmless enough outlet. But at times, the blame falls instead on people of a different race, nationality, or religion, as it did after the Great Kanto earthquake of 1923, or Hurricane Katrina in 2005. Disasters are threats not only to our survival, but to our conscience.

petulance	不機嫌、癩癪	dubious	怪しい、いかがわしい
lay siege to	～を包囲する	alleged	(真偽不明だが) 主張されている
idolatry	偶像崇拜	indulge in	～にふける
appease	なだめる	tectonic plate	構造プレート
brimstone	硫黄	displeasure	不興、不満
mitigation	軽減、減災	conscience	良心

Natural Disasters and Humanity #4

In the aftermath of the 2011 Tōhoku earthquake, news media around the world repeatedly showed Japanese survivors _____ at aid distribution points, which _____ the international community. This has been told and retold to this day as a source of national pride. To be sure, such behavior _____, fostered _____, and helped the communities _____ effectively. However, it would be naive to attribute this simply to the _____ of the Japanese. Of course, factors specific to Japan may well have played a part, such as cultural norms that prize harmony and a humble acceptance that nature cannot be mastered. But the reality was far more complex. The motives behind human behavior are rarely simple, and _____. The first thing to understand is that what happened in Japan _____. In the immediate aftermath of a major disaster, communities enter what researchers call a “post-disaster utopia” _____ “emergency norms.” In the wake of various catastrophes, survivors have been reported to experience _____ the simple fact of being alive. Driven by this euphoria, survivors tend to develop an intense feeling that everyone _____ and that the crisis must _____. But these emergency norms are usually _____, lasting no more than a week or two. Take the earthquake that struck Peru in 1970. This was a region _____ ethnic conflicts and wealth inequality. In the first days, the poor _____, and the wealthy offered their resources freely. But as outside relief began to pour in, social tensions _____ over the distribution of supplies. Cooperativeness in the wake of catastrophe is _____ of Homo sapiens. Another factor played a major role, too. The communities struck by the disaster were in rural areas, where anonymity is _____. In such communities, everyone knows each other and families are _____. If one _____, word of it _____ almost instantly, and it is remembered for years. According to psychological research, _____ when there is a price for failing to practice it, such as ostracism by the group. As if to confirm it, consider what happened where the _____ disappeared. In the exclusion zone around the Fukushima Daiichi Power Plant, crimes such as burglaries and ATM break-ins occurred more frequently than _____. After all, social norms are _____. They hold only so long as the _____, and only so long as most people keep acting on it. Once those conditions fail and people act against the norm, the whole fabric of order can _____. Therefore, the flattering idea that a particular people or culture is _____ to _____ is an illusion. It is even dangerous because this idea _____ of what it is that sustains the norm in the first place.

In the aftermath of the 2011 Tōhoku earthquake, news media around the world repeatedly showed Japanese survivors queuing calmly and patiently at aid distribution points, which drew praise from the international community. This has been told and retold to this day as a source of national pride. To be sure, such behavior curbed panic, fostered a sense of solidarity, and helped the communities weather the disaster effectively. However, it would be naive to attribute this simply to the moral superiority of the Japanese. Of course, factors specific to Japan may well have played a part, such as cultural norms that prize harmony and a humble acceptance that nature cannot be mastered. But the reality was far more complex. The motives behind human behavior are rarely simple, and never singular. The first thing to understand is that what happened in Japan can happen anywhere. In the immediate aftermath of a major disaster, communities enter what researchers call a “post-disaster utopia” sustained by “emergency norms.” In the wake of various catastrophes, survivors have been reported to experience a kind of euphoria welling up from the simple fact of being alive. Driven by this euphoria, survivors tend to develop an intense feeling that everyone shares a single fate and that the crisis must be overcome together. But these emergency norms are usually short-lived, lasting no more than a week or two. Take the earthquake that struck Peru in 1970. This was a region long divided by ethnic conflicts and wealth inequality. In the first days, the poor shared what little they had, and the wealthy offered their resources freely. But as outside relief began to pour in, social tensions flared up again over the distribution of supplies. Cooperativeness in the wake of catastrophe is a universal tendency of Homo sapiens. Another factor played a major role, too. The communities struck by the disaster were in rural areas, where anonymity is practically non-existent. In such communities, everyone knows each other and families are bound by long-standing ties. If one behaves selfishly, word of it spreads throughout the community almost instantly, and it is remembered for years. According to psychological research, altruism flourishes when there is a price for failing to practice it, such as ostracism by the group. As if to confirm it, consider what happened where the watchful eyes disappeared. In the exclusion zone around the Fukushima Daiichi Power Plant, crimes such as burglaries and ATM break-ins occurred more frequently than in normal times. After all, social norms are fragile things. They hold only so long as the underlying conditions endure, and only so long as most people keep acting on it. Once those conditions fail and people act against the norm, the whole fabric of order can collapse like an avalanche. Therefore, the flattering idea that a particular people or culture is inherently too moral to descend into chaos is an illusion. It is even dangerous because this idea lacks any critical view of what it is that sustains the norm in the first place.

ostracism	村八分、集団からの追放	curb	抑える
euphoria	多幸福感	flare up	再燃する
altruism	利他主義	solidarity	連帯
anonymity	匿名性	aftermath	(災害などの) 直後の時期、余波
well up	こみ上げる	inherently	本質的に
weather	(困難を) 乗り切る	short-lived	短命の、長続きしない

Natural Disasters and Humanity #5

Natural disasters _____ human societies. Pompeii, a port city on the bay of Naples, served as _____ where goods bound for Rome were _____ and carried onto the Appian Way. But once the eruption buried the city in ash, its commercial role _____ neighboring towns, and Pompeii was abandoned, _____. Beyond such physical transformations, natural disasters profoundly influence human _____. For example, the Lisbon earthquake of 1755 accelerated the Enlightenment, which was _____, and helped _____ of Europe. Ironically, the earthquake struck on November 1, All Saints' Day, one of the holiest days of the Christian calendar, and many people had gathered in the churches for worship. Why did _____ have to die, crushed beneath their own churches? Traditional Christian theology, still bound to the idea of disasters as divine punishment, could not _____ to this reality. The Lisbon earthquake was also the first natural disaster in which a central government _____ the response. Leading both the relief effort and the rebuilding was _____, the Marquis of Pombal. Pombal made his carriage his office and his bed, and he directed _____ in a scientific and rational spirit. For instance, when the dead proved _____, he ordered them weighted and sunk into the sea, _____ of the Jesuits. This prevented the _____ and the threat to public health that decaying corpses would have caused. Because the relief efforts and recovery were _____ under Enlightenment principles, the Lisbon earthquake further advanced the spread of Enlightenment ideas and Europe's _____ Christianity. With each disaster, humanity has learned something and taken another step forward. On December 26, 2004, a massive earthquake off the coast of Sumatra _____ across the Indian Ocean. It engulfed not only local people but also the many visitors spending Christmas holidays at the beach resorts. Fifty-seven countries around the world _____. Also, thanks to advances in information technology, people across the world could watch _____ of the devastation. For the first time in human history, people across the globe _____ the losses of a single disaster. In its wake, the United Nations _____ for disaster reduction, and local disasters became something that humanity as a whole had a responsibility to _____. The evolution of human ethics is the story of an expanding "us" — of how many people we include when we say "we." The word "we" once _____. Slowly, _____ to the village, the nation, and today it is _____ all of humanity. Humanity has not yet _____. But with each terrible experience, we have moved forward, _____.

Natural disasters profoundly transform human societies. Pompeii, a port city on the bay of Naples, served as a key hub where goods bound for Rome were brought ashore and carried onto the Appian Way. But once the eruption buried the city in ash, its commercial role moved on to neighboring towns, and Pompeii was abandoned, never to be rebuilt. Beyond such physical transformations, natural disasters profoundly influence human thought and perception. For example, the Lisbon earthquake of 1755 accelerated the Enlightenment, which was already on the rise, and helped drive the modernization of Europe. Ironically, the earthquake struck on November 1, All Saints' Day, one of the holiest days of the Christian calendar, and many people had gathered in the churches for worship. Why did the devout have to die, crushed beneath their own churches? Traditional Christian theology, still bound to the idea of disasters as divine punishment, could not provide an answer to this reality. The Lisbon earthquake was also the first natural disaster in which a central government took charge of the response. Leading both the relief effort and the rebuilding was an enlightened statesman, the Marquis of Pombal. Pombal made his carriage his office and his bed, and he directed measures of every kind in a scientific and rational spirit. For instance, when the dead proved too many to bury, he ordered them weighted and sunk into the sea, ignoring the objections of the Jesuits. This prevented the spread of diseases and the threat to public health that decaying corpses would have caused. Because the relief efforts and recovery were carried out effectively under Enlightenment principles, the Lisbon earthquake further advanced the spread of Enlightenment ideas and Europe's drift away from Christianity. With each disaster, humanity has learned something and taken another step forward. On December 26, 2004, a massive earthquake off the coast of Sumatra unleashed a devastating tsunami across the Indian Ocean. It engulfed not only local people but also the many visitors spending Christmas holidays at the beach resorts. Fifty-seven countries around the world lost their citizens. Also, thanks to advances in information technology, people across the world could watch vivid footage of the devastation. For the first time in human history, people across the globe collectively mourned the losses of a single disaster. In its wake, the United Nations built up its machinery for disaster reduction, and local disasters became something that humanity as a whole had a responsibility to confront and alleviate. The evolution of human ethics is the story of an expanding "us" — of how many people we include when we say "we." The word "we" once meant only the tribe. Slowly, the circle widened to the village, the nation, and today it is coming to mean all of humanity. Humanity has not yet reached that ideal. But with each terrible experience, we have moved forward, one step at a time.

alleviate	軽減する	drift away from	～から離れていく
devout	敬虔な	machinery	機構、仕組み
unleash	解き放つ	corpse	遺体
mourn	悼む	devastation	惨状、破壊
theology	神学	footage	映像
take charge of	～を指揮する	tribe	部族