

WIND AS MODEL, MEDIA, AND EXPERIENCE

As Invisible as Wind, as Formless as Water

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The Philippine archipelago has a long history of both weather-related myths and battles with extreme weather. Warning bulletins focus on the different hazards that weather hazards can bring, and scientists and public officials alike constantly reprimand citizens for not evacuating despite these detailed bulletins. In this paper, the author looks back on her research in risk communication across different locations in the country and examines how people articulate wind and water as hazards. The author contends that the wind and water are blended into each other as a hazard, as part of a world where risks are embedded into each other's fluid meanings rather than entangled as discernible elements. Warning bulletins that treat hazards as elements rather than enmeshed dangers are therefore not always understood.

The Philippines comprises an archipelago of over seven thousand islands nestled in the storms, tectonic plates, and wind gardens of the Pacific. It shakes with earthquakes and typhoons. It lives in the shadows of volcanoes that spew lava into fertile, tempestuous lands.

I live in this country of great rage and chaos. I am a scholar, a columnist, a novelist, and an educator who has long listened to the stories of her country, whether in broadcast or social media, in research discussions or everyday conversations. They talk about surviving typhoons, resilience in floods, creativity in storms. Both "typhoon" and its Filipino equivalent "*bagyo*" are rooted in words that mean "wind" (in Mandarin and Sanskrit, respectively). The wind is a major player in pre-hazard warning bulletins, which contain signal numbers that correspond to the speed of the winds to come. The higher the signal, the greater the alarm should be.

However, in my last two research projects, scientists with whom I conversed complained that people don't heed these warning signals, as though they were unafraid of the damage that storms could bring. The scientists claimed that it was because people were uneducated and therefore couldn't understand

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English-language bulletins and signal systems. The scientists recommended translations of the data into Filipino, assuming that people would know how to act on orders in their native language.

This assumption has been replete in broadcast media, especially when news covers disaster recovery and critiques the government's preparation strategy. The country's weather bureau often exhorts communication practitioners in broadcast and social media to concentrate on scientific information rather than emotional appeals, with little attention paid to other forms of media that might aid in meaning-making, such as community conversations and discussions.

Why does this broad-scale transmission still not work after all these years of dealing with hazards?

In this paper, I examine Philippine creation and hazard myths alongside our scientific research and government efforts in dealing with weather disturbances and crafting warnings. I then turn to the environmental media studies, risk communication, and anthropology literature to examine studies of hazard articulations and meaning-making to provide points in which a discussion might be anchored. I then reflect on my research into various villages in the Philippines and how they articulate storm risks and hazards. These projects, carried out in 2013–16, involved interviewing local leaders and facilitating discussions with citizens, always asking how people understood the warnings they had received and how and why they acted upon the warnings in specific ways. I will then discuss these findings, allowing them to reveal how the media environment, government policy, and local experiences interact to give wind meaning.

Finally, I will reflect on the Philippines and my work as a scientist straddling the worlds of the bench sciences and the social sciences. I will tell my story in the way I best know how: in a style that formed my childhood and that has now become an escape from the garish and grating jungle of urban Metro Manila: as a narrative, a story with an embedded moral.

The moral—or the argument—is this: imposing standards of weather warnings that reduce complex natural phenomena to their component parts is akin to imposing a foreign reality upon people whose realities are melded, regardless of the language used to write these warnings. This imposition is forceful, for it does not disentangle the knots of the elements but inflicts violence on a lifeworld where one cannot discern where the water ends or where the wind begins. In considering the entangled complexities of science and risk, communication as practice, weather as a phenomenon, and meaning-making of weather, there must be space to interrogate and, therefore, reconsider how science, risk communication, and the media are constructed in a country laboring under myriad hazards, with multiple layers of cultures. Such insights contribute to risk communication, which has

hitherto been top-down and carried out to transmit scientific information, regardless of whether the concerned publics are confronting an emergency or are learning how to prepare for a hazard in the long term.

A/The Voice of Science

I belong to the Ateneo de Manila University, a Jesuit center of learning and home to the Manila Observatory. The observatory was the first of its kind in Asia when it opened in 1865, as Francisco Colina, a Jesuit scholastic, predicted typhoons from what was then an abandoned pigeon coop with improvised measuring devices (Ocampo 2022). The observatory served as the country's official weather bureau until the Second World War (Hidalgo and Badillo 2015).

Today, the country's official weather bureau is the Philippine Atmospheric, Geophysical, and Astronomical Services Administration (PAGASA). PAGASA sends official weather bulletins to government agencies to pass them through the government hierarchy down to the village level. These bulletins are sent, as well, to broadcast media outlets, which then create cartoons, comics, and radio announcements to make bulletins “palatable to ordinary people,” as local media practitioners sometimes put it. These bulletins are replete with standard scales. For example:

Signal #1: 39–61 kph winds coming in 36 hours. Plants will tilt. Houses made of light materials will be slightly destroyed.

Signal #2: 62–88 kph winds coming in 24 hours. Plants will be flattened. Houses made of light materials will be dismantled.

Signal #3: 89–117 kph winds coming in 18 hours. Plants will be broken. Stronger houses will show signs of damage.

Signal #4: 118–184 kph winds coming in 12 hours. Crops will be completely damaged, and buildings will crumble.

Signal #5: 185 kph or more. Extreme threat to life and property.

PAGASA has its own collection of media in the form of different standardized warnings for different hazards: there are color-coded river level warnings based on a river's carrying capacity, color-coded flood warnings based on the volume of rainfall, and icons to warn about coming thunderstorms (PAGASA 2023). A typical bulletin will include all these levels, colors, and icons, representing the possible damage that different hazards can cause, and with the expectation that public officials and citizens can assess the risks better if the facts are laid bare for every single hazard that is contained within the much larger hazard.

This process is laden with assumptions of linear, top-down communication, which also assumes that the united, unbiased voice of science, if passed from government to media to citizens, can supposedly spur people to protect themselves better from a complex hazard. However, while the bulletins are supposedly crafted to match the needs of specific cities or municipalities in the country, they are not always given attention by those outside the scientific community.

Peoples of the Wind and Their Myths

These multiple warning systems attempt to capture the country's long history of battles with the elements. The historical record is rich in references to how our tribes navigated the complex weather of the islands, which the Spanish nicknamed *Islas del Poniente*, the islands of the West Wind (Custodio and Dalisay 1998b, 1998c, 1998a). The first Filipinos were sailors and shipbuilders long before Spain's galleons came ashore: some tribes could observe the color of the skies and shape of the clouds to tell them when the storms would come or where the winds would blow. The tribes also carried out maritime trade across the islands in a wooden ship called the *balangay*, which featured sails with fibers so strong the Manila galleons would later make use of them to sail the long Pacific route to Mexico. Interestingly, today's smallest government unit is known as the *barangay*. Its name is indeed taken from the boats that used to navigate the seas, driven by winds that have not abated centuries later.

The first Filipinos might not have had standardized warnings for hazards, but their understanding was like that of many other first inhabitants: there was no objective separation of man from the world, where man always remembered and used the wind in his memories to cross seas, plant crops, or simply be calm (Forrester 1982). The myths, as our receptacle of meaning-making and therefore our media, embodied this complex universe and its cycles of struggle and rebirth, chaos and evolution, an earth forming and reforming, gods that sought power and control (Demetrio 1968; Gaverza 2014; Misajon 2010).

Prehistoric tribes spoke of the overlord Manaul, who lived in a low-lying sky, allowing him to communicate with humans while controlling the highest earthly powers of wind and water. There were island-specific gods: The Ifugao god punished wrongdoing by strong winds; the Bikol wind god married the goddess of the sea; one Bukidnon god was a hawklike being that balanced good and evil by flapping its wings to create the wind; and the Visayan supreme god held the powers of wind and lightning.

The earth was made from the violence of winds. In one creation story, the Philippine archipelago came from the rocks thrown between the lands and the air; in another, the islands rose from rocks that the gods of the winds threw at each other in a battle for supremacy to win the heart of the wind goddess Amihan. Water is the center of other myths: the Boholanos' first

woman was the mother of all the living after first touching water; another myth says that the archipelago came from the excreta and urine of a giant rat relieving himself, and the mountains came when an angry god kicked the creature so that it bounced on its own droppings.

In the Filipino mythos, Man is the product of earth and air. One myth saw the god of the air breezes and the goddess of the sea breezes in violent flirtation, which led to the formation of a bamboo plant that housed the first man and woman. Another frames the god of evil as the one who breathed life into the humans newly created by his brother god, the author of goodness.

These myths have survived through books and stories, and they speak of diverse civilizations who lived in close contact with nature and knew its whims and seasons. They speak to a universality of a need to find meaning in chaotic realities by building pantheons of gods that battle each other. They are no mere stories, but a reflection of man's relationship with nature, a history of how different languages across the world are testimony to the varying nature of winds, whether they carry frost to freeze one's beard in the dark corners of the poles or carry hot, humid blusters in the lands of the equator (Forrester 1982). Our myths are reminders that once, the media was that which carried meaning regardless of the scope in which it was viewed; that once, our myths were those which carried the stories of old civilizations and how they made meaning of reality.

The Philippines is home to three major wind systems (see [figure 1](#)). Most of the winds in the country move in an easterly direction, change when the rains arrive, and then change once again to bring the cold from the north, all in a dance of a fight for dominance (Tongol, n.d.). *Amihan* is the northeast monsoon: it blows from Siberia from October to March, ushering in dry weather that nips at the skin. *Habagat* is the southwest monsoon: it blows from June to October, bringing rainfall and humid air that helps irrigate farms (Marine Conservation Philippines 2019). The easterlies, or trade winds, seem not to have a name in mythology but are in perpetual motion, pushing warm air from the Pacific Ocean.

In the midst of these winds is the Sierra Madre mountain range, a reptilian spine of peaks snaking through the Pacific side of the country's northern island of Luzon. This fence of mountains breaks some strong storms, consolidates rainfall into the valleys, and shelters thousands of endemic species of flora and fauna. On its slopes today are bare skins of soil, showing the indiscriminate illegal logging that has plagued the mountain range for decades (Persoon et al. 2009).

The Philippines is a country steeped in both religion and folklore, but it is also a place of scientific research. These multiple voices can also carry multiple worldviews that provide varying, sometimes contradictory lenses through which to perceive reality.

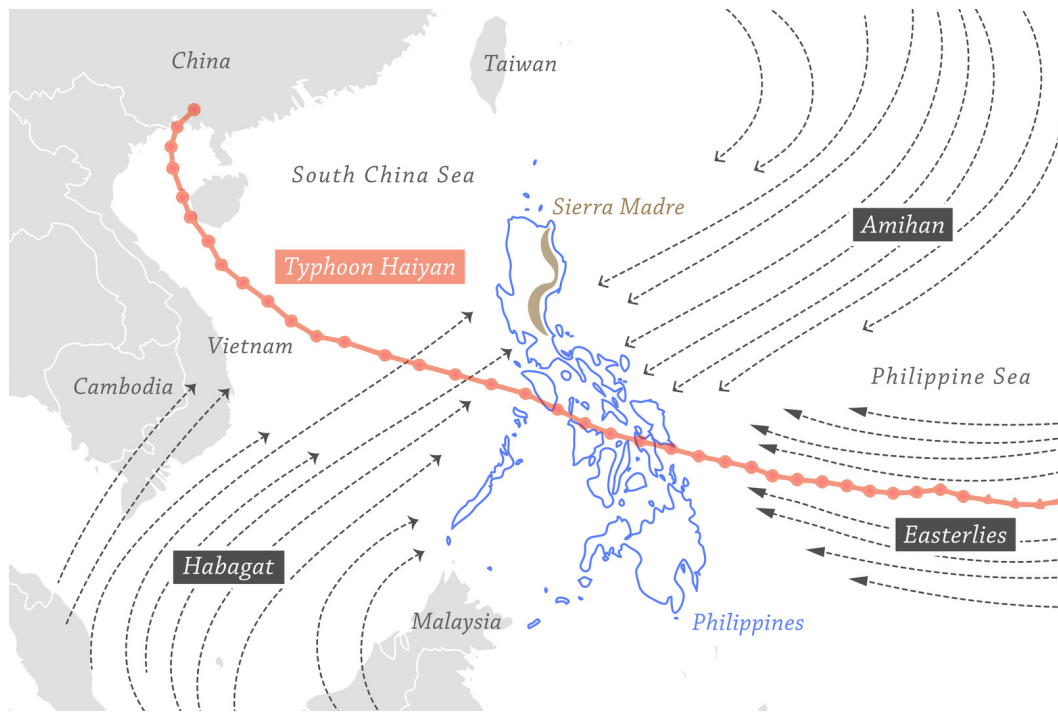


Figure 1: The Philippine Islands, their major wind systems, and the path of Typhoon Haiyan. Created for the author by Giacomo Marinsalta.

Theorizing a Fluid Environment

The media studies and anthropology literature are rich in analyses of the fluidity of wind, water, media, government, and the risks being constructed in this storm of meaning-making.

Risk originated in the medieval concept of an all-powerful Allah blessing merchants going on long sea voyages, with no control over their fate; but as trade expanded, so did the once-religious concept transfer to the Latin world as quantifiable, predictable, and controllable loss in a constructed future (Ghosh and Sarkar 2020; Mairal 2020). Early risk communication practice therefore focused on facts, cleaving the arena into the informed counseling the ignorant: There were the scientists disentangling a complex world, serving a general public entangled in complex risks and hungry for scientific information. Practice centered on reformatting information using supposedly unbiased scientific nomenclature provided by allegedly unified expert voices to purportedly avoid misinterpretation (Wynne 1996).

Science, however, is neither univocal nor unemotional; rather, there are ongoing debates that contribute to the scrutiny and legitimation of knowledge (Wynne 1996). Science does attempt to objectively divide itself from messy reality by elucidating the direct causes of complex phenomena through quantification, surveying, and large-scale applications of findings (Lamarre 2020; Liboiron 2015; Wynne 1996) and then translating research into a standardized language designed to organize discussion among technical experts (Imaoka 2015; Siegel 2020; Wynne 1996). When policies are

fashioned to be guided entirely by science, they tend to address the needs of the average citizen while burying exceptions to the rule beneath numbers and statistics (Ghosh and Sarkar 2020; Liboiron 2015). When the media is told to base its messages entirely on science, then the media adopts the standardized language with the notion that it is closing the gap between experts and laypeople (Mukherjee 2020).

Wynne (1996) led the charge in criticizing such a brand of risk communication, which assumes uncontested, homogeneous scientific expertise at odds with a science-averse, homogeneous public. Wynne's research showed that the public was ambivalent about science while being dependent on it, and understood the world as complex and interconnected. Hostile reactions to scientific information had little to do with anger and more to do with rationalized would-be disasters being imposed upon a public that felt itself chastised and forced to meet the standards of a field that showed no signs of wanting to understand the complexity of lived experiences. To remove the harmful dichotomy, Wynne (1996) as well as Mukherjee (2020) advocated for a constructivist model of knowledge, one that would recognize multiple coequal worldviews as scientists and nonscientific publics journey through a crisis together and learn from it to prevent another, though such a model might be difficult to implement in emergency situations.

What role would the media play in such a model? Media is no mere disseminator of information: It amplifies risks, adds layers to emergency warnings, even constructs reality, and provides an illusion of control and certainty (Imaoka 2015; Leikam 2015; Ghosh and Sarkar 2020; Mukherjee 2020). Media has many forms carrying meaning, and can convey privilege and power, as it portrays some publics as disobedient and others as compliant regardless of the economic affordances (or lack thereof) that such publics face (Mukherjee 2020; Leyda and Negra 2015). The now common discourse of "rare" events, while dramatic, also absolves governments of their responsibility to create better infrastructure; this, too, passes the responsibility of survival to citizens while penalizing them for disobedience (Leikam 2015; for a discussion of Hurricane Sandy and Fukushima, see also, respectively, Liboiron 2015; Imaoka 2015).

Might there be other forms of media that focus not on broadcasting but instead on lived experience? To the layperson, it is the body that becomes the medium through which people make meaning; it is these "vernacular mythologies of the everyday" (Mukherjee 2020, 160) that people turn to, rather than rational, empirical data presented in broadcast format.

Such diverse understandings of reality have been explored in the anthropology literature. Early anthropological research often contrasted modernity with the ancient as a progression from enchantment (a reliance on cosmic powers) to disenchantment (a reliance on scientific power). Newer

research challenges this dichotomy, observing that both ancient tribes and Western science aim to control a messy reality through spirits and technology, respectively. Schnegg's (2019) work with Namibian scientists and indigenous groups revealed differing articulations of the nature of the wind. Steinberg and Peters (2015) likewise spoke of the fluidity of nature, invisible when one walks on mountain trails that are microscopically reshaped over millennia, but manifest when one steps into the ocean that swirls and moves constantly. Storms are likewise fluid in their melding of wind into water and the storm into land, so that there are no longer boundaries to distinguish the elements. For instance, the structures of cities determine the impact of a storm, while the strength of storms constructs ideal cities (Bremner et al. 2022); the culture of a country feeds into its architecture, and the changes made to architecture likewise feed into culture and myth (Furuhata 2019).

Zee (2022) used the compound wind-sand to talk about the desertification plaguing China, and how it is appreciated as neither wind nor sand in isolation, but viewed by scientists as a moving target to be understood and controlled by experimentation. Peters (2015, 111, 321, drawing upon Heidegger) and Bremner et al. (2022, 16) likewise explored the delightful entanglements of lived reality, with its complications that make variables meaningful only insofar as they are intertwined with their context. A standardized language, though aiding science and taken up by media to enforce order, could well be a remnant of colonial discourse that aims to civilize so-called savage societies.

These arguments lend credence to the idea that media cannot be confined to broadcast media alone, and that taxonomizing such complex realities also renders them misunderstood and meaningless, especially when complex hazards are understood in entangled ways.

Much research nevertheless continues to work on the assumption that science is at the heart of decision-making, which shortchanges the complexity of the human condition and curtails the potential of risk communication. In the Philippines, policies are often drawn with a broad brush: science is pushed to the center, which might not work in all situations: in long-term planning, multiple knowledge forms and experience might need to be taken into account; in emergencies, science needs to fit context and current need. Given the centrality of science in such a model, scientists then worry that refusal to evacuate is a result of personal irrationality and inability to understand scientific information. This imposition of responsibility on an individual, rather than on failures of the state to provide the necessary infrastructure for living decently (Lamarre 2020; Leikam 2015; Leyda and Negra 2015), has kept both research and practice chained to the assumption that people simply need to listen to science regardless of whether they are experiencing a disaster or are planning to not have one.

This approach reinforces the view of a homogeneous science speaking through a disseminating media to a homogeneous national culture, which likewise prioritizes generalizable risk-related research over that which seeks to examine specific contexts. Broad-based research, however, dismisses the many realities of this diverse archipelago and disregards how our disasters were not sudden thieves but slow parasites preying on the vulnerable, the poor, the marginalized (Liboiron 2015). To ignore context-specific research is to reframe disasters as disaggregated from circumstances, measurable, reducible—a narrative of those in power.

Even recent research and practice obscure specific Philippine experiences. For example, local researchers advocate for training programs for nonscientists or translating warning bulletins into local languages regardless of context (Montemayor and Custodio 2014). Zee's (2022, 237) work encompasses all of Asia in its study of China; and yet the giant does not represent all of Asia. To confuse China with the rest of the continent is to erase the rich cultures and lifeworlds that could still speak to the conversations on the co-constructions among risk, media, and the environment.

When research on the Philippines is grounded in local contexts rather than framed according to preconceived notions, it yields findings that are rich and nuanced. There is the science of the West, the Catholicism of the Old World, the myths that linger and persist beneath our hundreds of living languages. The Mamanwa tribe, for instance, use their indigenous knowledge of animal behavior and the visibility of celestial bodies to prepare for major storms, but were ignored by local authorities, who insisted on using hazard maps and model-driven projections (Cuaton and Su 2020). Storm evacuees negotiated a complex lifeworld of housing structures, important items, the forces of nature, and their own social networks to guide their evacuation instead of relying on scientific knowledge alone (Cajilig et al. 2020). In some places, people wait for an authority to order them to evacuate (Roeffen 2013); in others, people do not evacuate at all because they feel immune to storms and floods (Cajilig et al. 2020; Montemayor and Custodio 2014).

As Zee studied the state and movements that corresponded to and resembled dust storms, I will use a similar lens to look at the stories unearthed in my studies of various Philippine municipalities and their understanding of storm warnings. This lens of anthropology in parallax entails gathering different perspectives not to create a single truth, but to examine multiple perspectives and thereby examine the phenomenon in depth. I aim not to generalize the state of the country but to examine the tapestry of merged wind and water, even the constructions of the identity of the media in a country that lives in the storm of a myth-rich past and an entangled present.



Figure 2: The study sites for the two paths of older storms and Haiyan. Created for the author by Giacomo Marinsalta.

My Research Paths

I have traveled to many places in this archipelago as a researcher studying how people understand weather warnings (Gotangco and Ponce de Leon 2018; I. Z. Ponce de Leon 2023, 2021b, 2021a; M. I. A. Z. Ponce de Leon 2020b, 2020a). I will discuss my findings in light of my search for articulations of wind: I will examine two places in the path of storms that used to be concentrated in the northern island of Luzon; then, I will examine five locales in the path of the destructive Haiyan. These locations are presented in [figure 2](#).

In each case, I discuss how people speak of storm risks and perceive broadcast media warnings. I use these articulations of their experiences to reveal their meaning-making of wind and water, as well as their rich media landscape beyond that which broadcasts information.

The first path: Luzon

Camarines Sur is a province on the Bicol Peninsula, on Luzon's Pacific side. For years, Bicol was the most frequent target of typhoons; but as it learned its lessons, so did it become the country's model for dealing with violent storms.

Despite this supposed experience, our Camarines Sur discussants relied heavily on the media for information, then lambasted it when it did not meet their expectations. When confronted with numerical information, they did not seek to understand the information but instead ignored it.

Citizen 1: Honestly, when the news reports from TV and radio state those warnings, I really don't understand them. I understand nothing. I understand the wind speed is 195, but that's about it. I even find it hard to comprehend what gustiness means.

Citizen 2: No reaction, I guess, since I don't know what those mean.

When asked about typhoon signals, the citizens responded that they didn't pay attention to wind speeds but waited for the signal warning, which is actually a system based on wind speeds. The signals, however, were understood as evacuation measures rather than scientific descriptions of a physical phenomenon. They asked for the signals to be described as experiences rather than articulated as numbers.

Citizen 1: ... signal no. 1 means the typhoon is not that strong, signal no. 2 is somewhat strong, and signal no. 3 is a really strong typhoon.

Citizen 3: It's not enough because it must be specified. For example, what can we expect or experience from the signal no. 3 typhoon? Would there be heavy rain? What's the wind strength? What else do we experience in times like that?

While they could pick apart the hazards associated with a typhoon, they could not remember the color warnings and signal warnings, which described two different phenomena (water and wind). However, they recognized the very real damage they could incur; therefore, they wanted to directly be told what to do, a request that is understandable in an emergency situation.

Citizen 3: But isn't there a time when we experience strong winds without any rain, or heavy rainfall but without strong winds? What should we really focus on preparing for anyway? Should we be worried about our house roof leaking and rain coming in? Or do we need to tie down our house so that it won't get toppled by the wind?

As the typhoon winds blew through Bicol, their gusts also hit Luzon's Sierra Madre mountain range. Whenever a typhoon is over the open waters of the Pacific, it is a dangerous wind beast; once it meets the denuded Sierra Madres, it drops rain in torrents. In 2009 the Marikina River valley paid the price of years of illegal logging: a near-static storm came and took less than a day to pour a month's worth of rain into the city. Marikina was submerged. People were swept away in floodwaters, homes were wrecked, and whole housing projects and gated subdivisions were completely destroyed.

When our research team arrived years later, we found that the wind signal system was understood as flood warnings. Signal number 1? No floods. Number 2? Low floods. Number 3? Lots of floods. Number 4? They couldn't imagine it. Our discussants looked at us in fear; some even broke down in tears. They had survived Haiyan and had transferred to Marikina. One participant was the only surviving member of a family of a dozen, all of whom had disappeared in Haiyan's storm surges. We pressed them for their thoughts on what warnings should contain, but in the end, they told us that someone should just tell them what to do.

In contrast to the Camarines Sur participants, wind played less of a role in discerning the magnitude of a hazard, even as the Marikina participants used the wind-based storm warnings to talk about the effects of water. Warnings were interpreted as action: school suspensions, evacuations, packing up. They were ambivalent about scientific language when it was presented during emergency situations. They wanted to know how to protect their children's lives, where they would get their next meal, or if they would still have a house standing when they returned from evacuation.

The government officials we interviewed extolled science as the sole, unquestioned legitimate source of information. Even community-based disaster monitoring was framed as teaching local officials to become experts in reading weather maps, using weather equipment, and understanding science; local media were there to bridge the gap between the experts and the layperson. With so many warnings, local officials believed that anyone who didn't evacuate was insolent, disobedient, ignorant.

In this old path, there is a seeming tension between the local lived experience of a storm and a need for experts to give direct orders. On closer scrutiny, we also find that the language of supposedly standardized, science-based warnings is not adopted, but its symbols are. The standardized levels are interpreted as everyday concerns: where science speaks of disaggregated phenomena, nonscientists use the language to speak of complex occurrences for which whole lives are disrupted and for which direct orders are needed, especially in emergency situations, rather than a slew of information from which people have to intuitively glean action.

The second path: Haiyan

Haiyan is one of the most powerful storms to have hit land. Days before it reached the Philippines in 2013, it was a barrel of wind whipping up heat and air in the Pacific. The International Space Station photographed its perfect circular shape. Meteorological agencies took turns predicting its trajectory, issuing warning after warning in the language of standardized levels: signal numbers surpassed any that had ever been formulated, and storm surge numbers predicted waves at least 17 meters high. Calls for evacuation continued as the storm tracked westward, intensified, pulled all cloud cover so that the central islands of the Philippines felt as though they had been plunged back into the heat of summer.

Haiyan hit land on November 7, first lashing into Guiuan, Eastern Samar, with sustained winds exceeding 300 kilometers per hour. It passed over inland waters, weakening and amassing strength in turn, before exiting three days later through the island city of Coron on the shores of the South China Sea.

A few years later, my fellow researchers and I visited the cities devastated by Haiyan. We began with Guiuan, the port of entry. We took outriggers to the fishing village, an island seemingly built on rocks, smelling of fish and seaweed. The wind was sticky on our faces as we spoke with mothers who had brought their children along. Their husbands, all fishermen, were out for the day, and it was the women who came to tell their stories.

Haiyan was so strong that it destroyed houses, uprooted trees, and disrupted communications. The leaders remembered receiving official bulletins about Haiyan's winds, but they could not remember the numbers. They could recall the order to evacuate, but all the coverage disappeared when the power went out. They felt the wind then: they could sense its power on their skin and knew it could wreck a house. They could tell in which direction it would move. At the discussion, they twirled their fingers to the ceiling to talk about where the winds would go, in the directions called counterclockwise and clockwise by the West.

Facilitator: What if you don't have any radio, power, or text? How would you know that a storm is coming?

Citizen 5: The older people know how strong the winds are. They know where the winds will go.

Citizen 7: They know that if there's this kind of wind [fingers up, twirling], the storm's about to end.

Citizen 5: And they know that if there's this kind of wind [fingers up, twirling], then this is really going to be a storm, a real strong storm.

They chose not to evacuate to a shelter. Instead, they ran to the uplands, dug holes six feet deep, and hid beneath tarpaulins, as their elders had once taught them. Many were saved, and perhaps more would have been had they not been locked in evacuation centers that eventually crumbled in the storm surges that Haiyan's winds swept in from the sea.

There is no surprise in this community's appreciation of the power of wind and its memory of its elders. They were primarily fisherfolk with a shared knowledge of the forces of wind on the open waters of the Pacific. Those who risk fishing in such an unforgiving place are also those most able to imagine how the wind has a voice and body of its own, who must rely on the winds to navigate when all light and land are lost to human sight.

Then, we visited an inland village nestled in concrete alleyways and shielded by high walls. There, we were greeted with a different story: The local leaders remembered the warnings, including the idea that the storm would be strong enough to lift a tricycle. To this, they disagreed:

Leader 2: We didn't know about the speed of 300; we just heard the news on the radio that the winds could lift your house.

Leader 3: They said it could lift a tricycle, but really, it could lift a truck.

People left their houses as soon as they received evacuation orders. They could not talk about the behavior of stormy winds, but they used news of its power as a prompt to leave, a partner to orders by authority.

Haiyan kept its strength and brought down a wall of water upon the town of Palo, west of Guiuan. There, the storm surge drew souls into the deep and then pushed bodies to the foothills of the mountains, where they rotted for days. The locals spoke of restless ghosts, wisps of flesh still roaming the streets months after the tragedy had passed.

When we came to Palo, we were greeted by a lonely town. Stores closed early in the evening. There was resentful rebuilding in some places and a heavy air of death and grief in others. Both the inland and coastal villages talked about being used to the destructive force of storm winds. They assumed that the warnings, repetitive and drawn from a template, were all about wind; and because they were used to winds, they did not pay attention. The weather was hot and dry, unlike the violent storm TV news predicted. The people of Palo had taken for granted that the wind would come and greet them the way that any other storm had for decades. They did not know that there would also be a 17-meter-high wall of water that would come to destroy their town.

The stories about Haiyan ran the gamut of comical to pitiful. In the coastal village, mothers stayed home, thinking their position inland would protect them. Instead, they ran from house to house when the winds would not abate. They sheltered themselves for as long as a roof was above their heads, then ran to the next house when the roof and walls were blown away. Soon, they found themselves at the evacuation center they had refused to go to earlier, but with mere threads left from the clothes on their backs. The winds had stripped them near naked.

There was resentment in the inland village, and the discussions extracted a droning litany of exasperation: *Don't give us explanations for the warnings. We know what the wind is like from our experience. We would not have evacuated because of the looters. Just give us relief goods. Tell us where to go, and we'll go there.*

Unlike the coastal dwellers, the people in the inland village were rooted in place, rebuilding where they were brought to their knees, angry that their government had been so disorganized when they had decades of experience behind them. But, the villagers claimed, they would still live where their temporary houses stood; they were used to storms, after all, and they had dealt with the disasters that violent storms brought. They were ready to face the next one and the one after that. Life would go on.

The winds would sweep, like wraiths of those long gone, through the streets of Palo, across alleyways stained with seawater, through the mass grave of the cathedral with its tombstones of guardian angels, into the foothills of the mountains where the thousands of nameless lay buried deep in the mud that had mangled their bodies until they expired. Haiyan swept over land before finding itself once again in open waters and gathering strength. In its path was the island system of Camotes. One town, San Francisco, had been evacuated days before. Every person in town survived the storm.

San Francisco, Camotes, is a multi-awarded municipality. The words that accompany it in the public domain include “participatory,” “resilient,” and “survivor.” Camotes operates a *purok* system, a governance strategy that breaks down every village into smaller parts so that people help each other directly when a hazard arrives. When my team and I entered the island, we were greeted by a white sand beach, a sunset that cast its golden rays upon boats anchored for the day, huts that faced the sea, and people who spoke highly of their leaders. When I finished my work there, however, I found what other researchers have discovered since: that the *purok* system exacerbated existing power structures, so that some families appeared more favored than others. There was an almost exclusive source of information: the science-based bulletins that were filled with standards-based data rather than the indigenous knowledge that could have been given a voice had the *purok* system been more rooted in local cultures.

In both the inland and the coastal barangays, we found people who recognized the destructive potential of a hazard. They knew that hot and dry weather heralded the coming of violent storms. They could imagine storms so that when the warnings came, they could also imagine the damage: roofs flying, electrical posts falling, trees uprooted, houses falling apart.

They fled their houses because they were told to do so. Even as they had community gardens and well-documented climate change action plans, these plans looked out of place. Where was the stress on how fisherfolk could talk about indigenous knowledge, what storms would look like, and where the winds would blow? Where was the language that spoke of knowing the environment so well that people could taste the coming of storms?

The fisherfolk talked about the winds and storms but often buried them beneath the order to evacuate. They waited for science and were taught to venerate it, but what about the capacities they already had? While the warnings were useful for emergencies, the capacity to read the weather and the sea could have been harnessed to create plans that would incorporate indigenous knowledge as part of long-term planning for future hazards. It appeared that in dividing the barangay, the *purok* system also divided the old boats powered by winds, keeping people from recognizing their environment speaking to them.

Haiyan passed through more water before hitting Roxas City, Capiz, once the country's seafood capital. Shrimps, prawns, fish, clams, mussels—everything used to go through its ports, fished from its inland sea. Roxas suffered mainly agricultural damage from Haiyan, but is overfished, so that fishermen sail out farther, and the once rustic town is slowly being gentrified. We visited two locations in Roxas: one by the seashore that could be reached only by a one-lane cement road; the other an urban village sitting in a rain-drenched back street.

The coastal village was fearful of its captain. She was like the Philippine president then and would threaten sanctions on those who disobeyed her. When she ordered evacuation, all the fisherfolk packed up and left. The inland barangay, on the other hand, was cooperative, laughing, and candid about its process for deciding evacuation: people would watch the nightly news on TV first and then sit with their neighbors to discuss the next steps.

Everyone remembered the wind and the forecasts promising that houses could be destroyed and trees could be felled. People were afraid, but this fear did not translate to immediate evacuation. They moved only when the wind was very strong or when they were ordered to, but they still could not connect the strength they experienced to the news they had listened to. There was no connection between the sea and its habits and the knowledge and stories of generations past. Unlike the fisherfolk who plied the watery byroads of the Pacific, these fishers were of an inland sea: their navigation rested upon

visible land in addition to water. There was a material world to anchor their observations, a land that would allow them to see their world as water rather than an eternal dance between water and wind.

Haiyan would spend a day more in the Philippines, sweeping into islands and garnering more strength from seas before exiting via Coron. A municipality covering several holiday-destination islands, Coron's sands are clean, sparkling white; its waters are clear, glassy, glittering with the sun; its cliffs are jagged and dark, speaking of the movements of the earth centuries past.

When I first visited Coron, I fell in love with its islands, clean lakes, and clear waters. On my return, I saw garbage in the sea, a market standing on reclaimed land, and beaches peppered with black dust. I witnessed two storms: one of nature's making, where the winds buffeted our boat as we sailed to an outlying lagoon, and where the rains drenched our clothes as we trekked to a village; the other of human making, in the form of a mayor who wanted things to proceed quickly in all respects, so that his own risk management officer was often frustrated with the lack of support for safety training and inspections. It was difficult to converse with a blustering mayor who believed so much in his ability to rule, attract tourists from abroad, and develop the island.

His constituents, however, were less boisterous. They could describe storm surges and could not understand why the term had to be translated when it was already so easy to understand. They remembered Haiyan: they were the last to suffer Haiyan's wrath and were nearly destroyed. They had heard about strong winds and rain but did not evacuate. They said no storms had been that brutal before, so why should Coron experience something new?

They had perhaps felt only the mildest of wind, only the mildest of water in previous storms. The Haiyan warnings were highly descriptive rather than prescriptive, with both content and language foreign to them. After Haiyan, the inland village was never the same: it realized more great storms would come and, as a result, became a responsive community, developing evacuation and preparation programs that could help them respond accordingly.

The coastal village knew about the weather and spoke of a storm as a system with winds that blew one way, then another, as though to exact revenge after a calm. They could speak about storm surges:

Citizen 6: The wind will be strong, and the sea levels will rise.

Citizen 7: Take care, and then evacuate.

There was a beauty to Coron that I had missed and sought: I do not know if Haiyan had destroyed it, but I do know that people spoke more wisely and seemed to have opened their eyes to a much wider world that was encroaching on their town. It was as though they had been reminded that storms have no boundary, and no protective line could be drawn or built by humans.

The path of Haiyan reveals a Philippines of many faces, a parallax of many layers. On the eastern coast, Guiuan communities with varying acquaintance with the Pacific can articulate wind as a destructive force in its direction or power to move objects, but with varying responses to government orders. A few hours west, a Palo well acquainted with storms and winds hears warnings from a template and promptly calls upon memories of past storms to tell them if they will weather this one. Across the sea, San Francisco, Camotes, evacuated early, guided by the standardized languages of science, but their indigenous knowledge, so touted by their *purok* system, did not come to the fore. Farther west, Roxas sported thick interpersonal communication networks focused on evacuation. In Coron, the storm's exit point, people's lifeworlds of harmless weather were upended, so that both their imagination and their sense of community were awakened.

Faced with the open seas, we find communities speaking of nature, knowing its rises and falls, able to frame winds as partner to livelihoods; within the inner islands and peri-urban centers, we find communities waiting for orders, surrendering their languages to warning bulletin-speak on which they rely heavily to tell them that all things have strict definitions. In some places, wind signals are ignored either because of peoples' assumed intimacy with the hazard or assumption that it can never befall them; in other places, the wind's increasing violence is used as a sign to leave; and in others, it is read with the eyes of multiple generations of knowledge.

A Discussion

My research in these locations reminded me of the diversity of our risk perspectives. Very rarely could people extrapolate action from multiple layers of media into which flowed both scientific information and descriptions of possible storm damage, no matter how supposedly localized the descriptions were. To the government, community-based disaster management was about espousing a monolithic science that legitimized any media message in a time of uncertainty; media was a broadcasting monolith to close the divide between lay and expert through dissemination of fact-based, unemotional science to allow for personal control and rational response (Ghosh and Sarkar 2020; Imaoka 2015; Mukherjee 2020; Siegel 2020; Wynne 1996). People were the monolith expected to intuitively derive orders for evacuation from scientific information; and who, after not evacuating, were reprimanded for being ignorant about science and disobedient to a state that they had expected to provide safety nets for them (Lamarre 2020; Leikam 2015; Leyda and Negra 2015).

The response to this oversimplified representation of monolithic authority and broadcast was varied. Those who lived on the coasts found meaning in the wind on their bodies; they had become the medium through which information about reality flowed. Those who lived inland, on the other hand, found meaning in memories and experience, and would discuss what they had seen and make meaning of it; their words had become a medium. They trusted scientific bodies and the media for information, nevertheless; but when the winds and storms came, their response to information-rich warnings was ambivalence.

In Palo, the demarcation between trust and privileged status, as elucidated by Wynne (1996), was most apparent: people expected to be protected and resented local leaders when they failed to learn from experience. In Marikina, wind warnings disappeared into people's fears about water, despite the many standardized warnings that would supposedly assuage anxieties, echoing Bremner et al.'s (2022) disappearance of wind into land and the fresh uncertainty found by Imaoka (2015).

People could nevertheless articulate, and vividly, their experience with natural hazards. The wind was embedded, even obscured, in a symbol system representative of expert discourses, which disaggregated facts from the messy reality that the hazard disrupted (Imaoka 2015; Wynne 1996). Even people's requests to be told exactly what to do and how to prepare, rather than drawing action from scientifically derived descriptions of storm damage, were reminiscent of the real-world, complex experience of hazards, the "vernacular mythologies of the everyday" (Mukherjee 2020, 160). A storm was a complex experience in an emergency, and one could not derive action from layers of scientific information; only when the storm had passed could its separate hazards be discussed in terms of the steps to take in the next storm.

This is unlike the dust measured and acknowledged in Zee's work (2022): in typhoons, wind and water merge, and no gods battle for supremacy. To the government, the media was that which spread the science; but to the people, it was their experience that was the medium through which they understood a storm's complex meaning. People had co-opted the standardized system to encapsulate the complexity of surviving a likewise complex hazard. An example summarized from all the discussions:

Signal #1: Classes proceed.

Signal #2: Classes are suspended until the secondary level.

Signal #3: Classes are suspended until the tertiary level.

Signal #4: All offices are shut down.

Signal #5: Good luck, Philippines.

In the fashion of Zee's wind-sand, I was ready to name our storms wind-water or water-wind; yet to do so would be to still name the two elements as distinct. To use either of these hyphenations, I would have to ask: which element should come first? Is it the wind, with its own signal system that people interpret as a call for evacuation, flooding, or class suspensions? Or is it the water, which surrounds us, which we dread for its ability to flood our low-lying cities? Could I even create such a word if I wanted to account for the municipalities where people could sense the wind and speak of its impacts, as well as for the places where the wind was understood as part of a complex machinery of destruction?

Wind-water or water-wind shows the two distinct forces in one, rather than two that have woven themselves into each other, that are only as meaningful as they are indistinguishable. In inland villages, risks persist because they weave themselves into the threads of experiences or memories, and reemerge as part of many voices when people strive to make meaning of the messages they encounter; in some coastal villages, the entangled risks are felt on the body as medium and become meaningful when they are encountered on the body rather than merely heard about or seen on broadcast media.

As Invisible as Wind

The country's myths were not my childhood stories. Today, they feel foreign, like a book that must be memorized for a test. Yet the myths linger in the Filipino that I eventually learned to speak, in our weather forecasts that document *Amihan*, the wind that brings the biting cold of Christmas; *Habagat*, the wind that heightens floods; the *Easterlies*, nameless in Philippine myth, but the force that carries the heat of summer.

I clung to my notions of distinct elements when I presented this paper at a workshop, and later, as my work underwent reviews. There, I was introduced to work by Bremner, Peters, Zee, Wynne, Mukherjee, Imaoka, and many others. Through each reading, I found that my analysis revealed little about the Philippines but everything about myself. I was still the scientist who expected everyone to articulate reality as separate variables, to value a controllable and predictable world, to live comfortably in a universe of assumed monoliths. As I saw the mess of wind and water, hitherto unnamed by the languages I know, I saw and appreciated the complex reality I had once ignored, now caught in everlasting cycles of co-construction and uncertainty.

In this web of knowledge, I saw water as something we had to live with in resignation because of its visibility. It took the shape of everything: our flooded streets, our concrete cities, our oversilted rivers. Quarrel as we might in the monsoon season, we call for water in the heat of summer; nothing replaces water, and we grow angry when it disappears, for we are surrounded by seas that can only be seen rather than used. Water is the spouse with whom we fight but to whom we lay claim.

Unlike water, we can tame and duplicate the wind. When we lose it in the summer, we can seek out closed, artificial, air-conditioned spaces. It is a lover, into whose arms we flee whenever we find the convenience to do so.

We are the people wedded to the water, lovers of the winds, in a marvelous entanglement where the language begs for agglomeration rather than extrication.

As Formless as Water

There is no word for “risk” in Filipino, though it is often spoken alongside danger. Perhaps we live with it the way it was conceived (Mairal 2020): a contract with an invisible God who guards us on our long forays into fluid worlds, be they the sea beneath our boats or the rains that flood our roads; neither good nor bad, simply reality.

This nuances the notion that Filipinos do not perceive storms as problematic: we see storms as complex machineries made up of elements with varieties of damage, and we act on the effects of this complexity rather than derive meaning from descriptions of the individual elements. We have been admonished by the so-called modern world to adopt a variable-driven language of science, where all phenomena must be defined and controlled—save that in our lifeworld, many things cannot be separated: self from family, family from community, wind from water.

Risk communication in such an intricate web must go beyond creating static materials and cross into an acknowledgment of our fluid, inseparable contexts; it must go beyond an overreliance on monolithic media to convey monolithic science to an assumed homogeneous population. Media and knowledge, today, live in the conversations among people as they glimpse the news in its various formats; it is in their bodies as they feel the wind and water announcing their arrival; it is in their memories and experiences as they call upon what they have sensed, heard, seen, remembered. Media neither orders about nor controls; it awakens and spurs.

Emergency warnings are still needed and should contain instructions rather than descriptions; but to craft such warnings, a more intimate knowledge of local contexts might be needed in the long term. Perhaps this is where the power of conversation enters: between a government and its people, among locals, between communities that have weathered past storms and now have lessons to share. Conversations help people make meaning of complex experiences, as they call upon a mixture of memories and scientific information, rather than being expected to always listen to imposed scientific nomenclature (for which they have shown ambivalence) regardless of whether they are dealing with an emergency or preparing for a hazard. Like wind and water, a conversation can flow, ever-changing, allowing the many voices in parallax to see where the wind and water can still take them.

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The author declares no competing interests.

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