

Whethering the Storm

The Twin Natures of Typhoons Haiyan and Yolanda

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Super Typhoon Haiyan, known in the Philippines as Typhoon Yolanda, started life as a tropical depression in the western North Pacific (WNP) somewhere southeast of Pohnpei on November 3, 2013. As it tracked in a west-northwesterly direction, it intensified into a tropical storm, then passed over the small island nation of Palau before developing into one of the strongest cyclones in world history as it struck the central Philippines. Making landfall near Guiuan on eastern Samar in the early morning of November 8 with maximum wind speeds around 300 kilometers per hour, the typhoon was accompanied by a storm surge with wave heights of between six and seven meters and rain that caused extensive flooding, even if it was “not very heavy in comparison to many other tropical cyclones making landfall in the Philippines in the past” (Neussner 2014, 17). The islands of Samar and Leyte were particularly hard hit with Tacloban City, the capital and seat of government of Region VIII, virtually wiped off the map: 60 percent of structures were destroyed and another 30 percent severely damaged. More than 6,000 people died, over 2 million people were left homeless, and perhaps as many as 14 million people were affected in some way. Damages amounted to as much as \$13.6 billion (PHP 590 billion) with near-total losses to agricultural production in the eastern Visayas, particularly sugarcane, rice, and copra. The regional GDP is estimated to have been cut by at least 40 percent (Daniell et al. 2013, 1–3).

About twenty-five tropical depressions reach storm intensity or higher each year over the warm waters of the WNP, mainly between April and December. In fact, the WNP accounts for about one-third of all such storms in the world (Elsner and Liu 2003; Japan Meteorological Agency n.d.). Tropical cyclones whose maximum wind speeds exceed 119 kilometers per hour are known as typhoons and are mainly referred to in the Philippines

as *bagyos* (Hirth 1880). Early-season storms mainly form south of latitude 10° North and generally move on a linear track parallel to the Intertropical Convergence Zone. While the wind speeds of early season typhoons tend to be less intense, they carry greater amounts of rain and often cause serious flooding on landfall. Late-season typhoons, on the other hand, are generally much larger, develop at higher latitudes, and originate farther out in the WNP. Their paths often take them thousands of kilometers over open sun-drenched ocean, allowing them to grow into “heat-driven machines of enormous destructive potential” (Longshore 1998, 317).

Super Typhoon Haiyan or Yolanda, however, was a whopper even by the standards of late-season typhoons. The average wind speed (a one-minute average) of 315 kilometers per hour is the fourth-highest ever documented, and the individual gust maximum of 379 kilometers per hour is close to the world record set by Cyclone Olivia in 1996. Since 1958 only three typhoons have recorded average wind speeds higher: Typhoons Nancy and Violet in 1961 and Typhoon Ida in 1958. Most tropical cyclones reach their peak and begin to weaken before they make landfall, rapidly losing energy as their heat reservoirs run down. A noticeable feature of Haiyan or Yolanda, however, was that the cyclone struck the central Philippines at near peak strength, lashing the islands of Samar, Leyte, Cebu, and Panay with the full force of wind and water (Walsh et al. 2013). While certainly not unprecedented in historical terms, the rapid rise in coastal population during the twentieth century means that the impact of such cyclones is now devastating.

Most typhoons that regularly strike the Philippines receive only local reportage and pass uncommented upon by the international media. As a Category 5 cyclone, however, this one received world attention. A notable feature of this coverage was the different name by which people referred to it depending on where they were. To the world at large, the event is known as Typhoon Haiyan; to those who live in the archipelago, it is called Typhoon Yolanda. Typhoons are identified each year for international aviation and navigation purposes with both a number and a name.¹ Numbers are simply sequential but names are drawn from a list that includes people, animals, plants, astrology, places, mythological figures, and even jewelry. The World Meteorology Organization’s regional office in Tokyo is responsible for choosing the name according to an arranged set of procedures: “Haiyan” was drawn from the Chinese list.

Each nation (and district), however, retains the discretion to decide whether to use this international name for internal typhoon reporting. Since 1963 any tropical cyclone entering the Philippine Area of Responsibility is identified by assigning it a Filipino name (until quite recently only a woman’s nickname ending in “ng”) from one of four sets arranged al-

phabetically by the Philippine Atmospheric, Geophysical and Astronomical Services Administration. One set of names is used each year so that particular names repeat themselves every four years, and each set is accompanied by an auxiliary list from A to G in case the number of typhoons in any one season exceeds the nineteen-letter Filipino alphabet. The names used internationally to identify tropical cyclones are only used in the Philippines as advisories to airlines and for navigation purposes as ones in the vernacular prove to be better heeded by Filipinos. A typhoon that causes damages in excess of PHP 1 billion (\$21,626,300) and/or claims more than three hundred lives is classified as destructive and the name decommissioned and removed from the list (Bankoff 2004, 96). Being a late-season storm, internationally designated Typhoon Haiyan was accorded a Filipino name beginning in Y: Typhoon Yolanda.

However, these two different nomenclatures signify much more than a system of international and national meteorological classifications of wind intensities: they have come to represent two quite different discursive narratives about the typhoon and its aftermath. Typhoon Haiyan is headline news that explains the storm in terms of climate change, freak storms (numerical calculation of risk), and poverty. Typhoon Yolanda, on the other hand, has a storyline to do with national politics, accusations of incompetence (national versus local), identity, and self-worth. These very different narratives about blame and responsibility also lie at the heart of a fundamental difference in the way disasters are viewed from the standpoint of the developed and developing worlds: to the former, the emphasis is now much more on resilience and people's capacity; to the latter, disasters are still very much about vulnerability and disenfranchisement.

Typhoons in the Philippines

Reconstructing the histories of typhoons in the WNP is patchy prior to the late nineteenth century. Only with the establishment of meteorological observatories were statistics on wind velocities and precipitation published on a regular basis. Many of these observatories, like the one at Manila founded in 1865, were established by Jesuits. They issued timely warnings to shipping and coastal authorities. These daily observations on barometric pressures, thermometer readings, wind force and direction, and rainfall were usually disseminated in the form of monthly bulletins (Udías 2003, 269–281). The staffs of such observatories, however, were more than simply collators of data: they were also scientists and pioneers in instrument improvement and design for tropical locations. A striking feature of the Jesuits working at the Manila Observatory, for example,

was the novel ways in which they adapted imported precision instrumentation to local conditions. This innovation began with the simple modification of an aneroid barometer in 1885, led to combining a barometer and a cyclonometer into one instrument in 1897, and culminated in the invention of a refraction nephoscope to determine cloud direction and velocity in 1900 (Solá 1903, 19–23, 27–28).

Prior to the second half of the nineteenth century, the record of tropical cyclones in the WNP is based on archival material. While systematic records for some counties in China exist from the Northern Song Dynasty (960–1126 CE), this is unusual (Liu, Shen, and Louie 2001). Sources for the Philippines are based on a chronicle of typhoons striking the archipelago between 1566 and 1934 compiled by Miguel Selga, the Jesuit director of the Manila Observatory from 1926 to 1946. Unlike the Chinese record that is exclusively about typhoons that made landfall, much of the early Spanish material concerns losses at sea. Typhoons have played a significant role in the maritime history of the islands not only posing a threat to trans-Pacific communications, but also sometimes devastating entire fleets. During the Napoleonic Wars, for instance, a Spanish fleet on its way to intercept an English convoy was wrecked by a typhoon on the night of April 22, 1797 (Selga 1936). Even during World War II, naval vessels were still vulnerable: U.S. Navy Task Force 34 that was engaged in the “liberation” or re-conquest of the archipelago from the Japanese was badly damaged by Typhoon Cobra on December 18, 1944.²

Though Selga’s data are undoubtedly incomplete, the record does provide accurate information on the historical path of typhoons that match present-day variability and monthly distribution (García-Herrera et al. 2007, 10). On average, eight or nine typhoons make landfall over the Philippines each year (Brown 2013). The most common track described by Selga is for typhoons to form near Guam, move in an extended arc westward to Luzon, and from there split into two branches, one curving farther northward toward Japan and Korea and the other continuing westward across the South China Sea (Ribera et al. 2005, 89). The northern part of Luzon and the Batanes Islands were (and are) the most frequently exposed region of the archipelago. Selga’s chronicle depicts a colonial society beset by typhoons like that of July 1717 that was described as “the fiercest typhoon ever experienced in these islands” (Selga 1936, 22). In particular, the chronicle also provides mortality figures proving the extent of the damage wrought. Thus the typhoon that devastated Manila and the Ilocos region in September 1867 caused conservatively 1,800 deaths (Ribera, García-Herrera, and Gimeno 2008, 196–197).

The intensity of typhoons may be categorized by wind velocity but tropical cyclones and storms are also responsible for much of the precipitation

that falls in the Philippines. Historically, it is difficult to determine how much rainfall and associated flooding was due to the passage of typhoons. A list drawn up from the minutes of local town chronicles held by the Manila Observatory, however, give some indication of the level of precipitation as well as constituting a record of major floods that occurred in those parts of the islands occupied by the Spanish between 1691 and 1900. While again almost certainly incomplete, the list does provide an indication of the primary causes, geographical predisposition, and even the frequency of notable floods in specific areas.³ In particular, the chronicles frequently refer to flooding in connection to the passage of tropical cyclones: over 56 percent of all recorded floods might be directly attributable to typhoons over this period (Archives of the Manila Observatory, Box-10, 37; Bankoff 2007). Modern estimates bear out such statistics with tropical cyclones held responsible for 47 percent of the average annual rainfall in the archipelago (Rantucci 1994, 28). The close correlation between flooding and typhoons also suggests seasonality in their occurrence that corresponds to the greater frequency of tropical cyclones between July and November, the *tag-ulan* (rainy season).

Selga's chronology also allows a historical reconstruction of significant typhoons in the Samar-Leyte area that demonstrates that, while the wind intensity and storm surge associated with Typhoon Haiyan/Yolanda were exceptional, they were by no means unique. While there are scattered references to tropical cyclones striking these islands prior to 1800, it is really only from the mid-nineteenth century that a more detailed chronology can be reconstructed. What this record reveals is the frequency with which people living in Samar and Leyte were exposed to the full force of tropical cyclones—on average several times in a lifetime. In particular, these cyclones took a heavy toll on agriculture, as when a “heavy typhoon” in November 1865 caused the total loss of the harvest in western Samar, or when “the violence of the winds” and “the excessiveness of the rain” damaged *palay* (rice), abaca, sugarcane, and *camote* (sweet potato) fields in southern Samar in November 1874 (Selga 1936, 49). Flooding was also frequently associated with the passing of such typhoons. A “terrible storm” that lashed Leyte in mid-December 1879 caused the Abuyog River to swell, forcing people to take refuge on their roofs and destroying about a thousand houses in the province (Selga 1936, 50).

On some occasions the track of these typhoons was virtually identical to that followed by Haiyan or Yolanda. The typhoon that passed over Leyte and Samar in October 1897 is the best recorded example, as it also generated a tremendous storm surge that destroyed completely several towns and claimed about 1500 human victims (Algue 1898). However, a cyclone on 26 November 1912 reputedly “wrought enormous damage” to Capiz

and also partially destroyed Tacloban (“15,000 die in Philippine storm” 1912).⁴ Yet another late-season typhoon on November 24, 1934, struck the same eastern Samar town of Guiuan before passing south of Tacloban and “giving rise to an unprecedented flood,” presumably a storm surge, that caused considerable damage to Leyte (Selga 1936, 47). Sometimes the storm did not even need to be classified as a typhoon to cause extensive destruction and death. Typhoon Uring (international code named Thelma) was technically a tropical storm by the time it reached Tacloban on November 4–5, 1991, just five months after the eruption of Mount Pinatubo. Nonetheless, as the storm passed over high terrain, it unleashed torrential downfalls up to 580 millimeters that fell within a three-hour period. In particular, the Anilao-Malbasag watershed above Ormoc City was overwhelmed. Flash flooding devastated most of the city in a matter of minutes, killing 4,922 people in the urban area (Dañguilan-Vitug 1993, 1–7). Perhaps, more than any other hazard, tropical cyclones have influenced the lives and livelihoods of Filipinos, past and present, creating a complex web of relationships that oscillates between disaster on the one hand and the timely need for rainfall and agricultural productivity on the other.

It’s All in the Name

A mature typhoon is a formidable thermodynamic engine consisting of an array of intense line squalls spiraling inward to a common circle or eye. Surface winds blow inward along the squall lines with ever-increasing velocity being diverted first upward and then outward, with the resulting cloud crown spreading for hundreds of kilometers. Typhoons depend for energy on these inwardly spiraling winds that extract surface moisture and heat from millions of square miles of surrounding ocean. In the WNP typhoons move slowly westward with the prevailing easterlies. Their exact paths, however, depend on the prevailing mean pressure gradients that push them northward and eastward according to the seasonal oceanic high-pressure centers they encounter (Dorn 1974, 80–83). Statistically, the densest concentration of typhoon tracks in the world lies between Manila and southern Japan, a distance of about 1,600 kilometers and colloquially known as Typhoon Alley.

To the outside world, a typhoon is either a white, whirling mass that appears as a satellite picture enfolding land and sea within its mantle and obscuring the nation over which it passes, or it is an intensely multicolored computer projection where the depth of shade signifies the level of precipitation. It is given an international codename like Typhoon Haiyan and its history is chartered, recorded, and soon forgotten by the world’s media

and public alike. To those for whom the typhoon is not simply a media headline or a nightly weather anecdote, who live through the storm and experience its property-damaging winds and life-threatening waters, a typhoon is personal, part of the narrative of life. For many who live in countries like the Philippines, it is a frequent life experience, one that, even if they have not completely learned how to cope with it, they have come to expect (Bankoff 2003). The late Fr. Miguel Selga concluded that the frequency of such storms induced a condition of mass fear among Filipinos for which he coined the word “tifonitis.” He defined this condition as “a pathological state owing to nervous over-stimulation produced by the frequency or extraordinary intensity of typhoons,” and then proceeded to describe in great detail the events of mass-induced hysteria that followed the passing of five strong typhoons in quick succession between October 15 and December 10, 1934 (Selga 1935, 54–58). In the Philippines, such storms are also given names, local names like Yolanda that reflect the reality of the lived-through experience. In many respects, these two names, the international and the national, even though they refer to the same typhoon, represent different events. The differently named typhoons are described in different ways, they are attributed to different agencies, and they leave different legacies.

Typhoon Haiyan

Apart from narratives about the human tragedy and cost, the international reportage of Typhoon Haiyan was principally about climate change in which the storm’s unprecedented winds and rains were depicted as “a sign of what’s to come in a warmer world” (Walsh 2013, 20). This conflation of weather and climate was dramatically moved to center stage due to the typhoon coinciding with the opening of the annual United Nations Climate Change Conference in Poland on November 11. In particular, extensive publicity was given to the remarks of the Philippines representative and head of his country’s national climate commission, Naderev “Yeb” Saño. In a passionate speech, he linked Haiyan to the reality of climate change. “What my country is going through as a result of this extreme climate event is madness,” he said to 190 delegates. “We can fix this. We can stop this madness. Right now, right here.” He challenged climate sceptics, urging them to “get off their ivory towers” and see the impact of climate change firsthand (Vidal and Vaughan 2013). In particular, he reminded delegates that typhoons such as Haiyan represented “a sobering reminder to the international community that we cannot afford to procrastinate on climate change” and he vowed to stop eating until ne-

gotiators at the conference made “meaningful” progress (Withnall 2013). He also revealed that his family came from Tacloban and that, as he spoke, his brother was “gathering bodies of the dead with his own two hands” (“Typhoon Haiyan: Is Climate Change to Blame?” 2014). He sat down, sobbing, to a standing ovation.

This was not the first occasion at which Yeb Saño had broken down during such an address. At the previous year’s conference held in Doha, he had made a similarly impassioned plea to the assembled delegates just as Typhoon Bopha (aka Pablo), the strongest tropical cyclone to ever hit the southern Philippines, cut a swathe of destruction across Mindanao, leaving thousands homeless and causing more than 600 fatalities. “I appeal to all, please, no more delays, no more excuses” he said. “Please, let Doha be remembered as the place where we found the political will to turn things around. Please, let 2012 be remembered as the year the world found the courage to find the will to take responsibility for the future we want. I ask of all of us here, if not us, then who? If not now, then when? If not here, then where?” (Vidal 2012). Both the typhoon’s southerly trajectory and its intensity, he continued, comparing it to Hurricane Sandy that had hit New York, Haiti, and Cuba the month before, were clear signs of climate change. Again, the hall rose and applauded. Such international dramatics help convey the notion that countries like the Philippines are on the front-line of climate change, a condition caused by the carbon-intensive economies of the developed world who have failed to curb their greenhouse emissions. The implication, of course, is that such governments should acknowledge their responsibilities and provide large-scale compensation to those countries and people most affected by climate change (Bello 2013, 4).

There is some scientific evidence that appears to support Yeb Saño and the Philippine government’s claims. As has already been stated, Typhoon Haiyan was reputedly the strongest storm ever to make landfall and two of the other top five storms with the highest wind speeds, Typhoon Zeb (1998) and Typhoon Megi (2010), also struck the Philippines (Alexander 2013). It was the third time, too, in less than a year that a powerful typhoon had struck the archipelago: the previous August, Typhoon Trami had caused massive flooding on the island of Luzon, and flash floods had led to hundreds of deaths when Typhoon Bopha cut across a sleeping Mindanao in December 2012 (Schiermeier 2013). Future projections based on high resolution models indicate that such scenarios are likely to become more commonplace as greenhouse warming causes the average intensity of tropical cyclones to rise 2–11 percent by 2100 (Knutson et al. 2010). The Pacific Ocean, too, is warming—possibly faster than at any time in the past ten thousand years. Logic would suggest a clear relationship between the

intensity of storms and a warming world: a warmer world will probably feature more-extreme weather. As regards the Philippines, government statistics also suggest that typhoons are getting stronger: from 1947–1960, the recorded highest wind speed of a typhoon was 240 kilometers per hour; between 1961 and 1980, it was 275 kilometers per hour; and in the past thirteen years the highest wind speed was 320 kilometers per hour, recorded with Typhoon Reming in November 2006 (Vidal and Carington 2013). Sea levels are also rising. Since 1900, sea levels around the world have risen on average by eight inches and the rate of increase has nearly doubled in the past two decades. Changes in wind patterns have meant that rises in the Philippines have been the highest anywhere in the world, three times more than the global average (Lean 2013). All this taken together with Tacloban’s location at the end of a long funnel-like bay undoubtedly contributed to the height of the storm surge that November morning.

The problem, however, is that science is never quite so definitive or clear-cut. In fact, there is little real evidence to support the contention that global warming is making for a higher number of storms. For a start, the average surface temperature of the planet seems to have increased far more slowly in the past decade than it did over previous ones: just 0.04° Centigrade between 1998 and 2012 compared to the 0.11° Centigrade decadal rise since 1951. The planet is still warming, but natural climate variability and the effect of the oceans that absorb 94 percent of heat energy may account for what climatologists expect to be only a temporary respite (Lepage 2013). Moreover, figures vary greatly according to how and where they are calculated.

Perhaps, more importantly, the number of tropical cyclones around the world over the past forty years has remained fairly stable at around ninety a year. These figures are reliable since they are based on satellite technology. Although global warming may increase the thermodynamic potential for tropical cyclones, their frequency depends on several other factors like shear winds (winds blowing in opposite directions and different intensities at different altitudes) that often decrease the likelihood of storms as the climate warms. In fact, models actually project a decrease of between 6 and 34 percent in the global average annual frequency of tropical cyclones even if their intensity in the North Atlantic is set to increase over the next century (Emanuel 2013; Knutson et al. 2010; Schiermeier 2013). The most recent report from the Intergovernmental Panel on Climate Change (IPCC) suggests that the global frequency of tropical cyclones will either decrease or remain essentially unchanged in the twenty-first century. Though there is lower confidence in region-specific projections, there is general agreement that the physical and social impact of such storms is

likely to substantially increase in some ocean basins (IPCC 2014, 14–46). All these projections, however, have an underlying flaw in that they are based on a historical record that is unreliable and patchy. Even so, certain trends are discernible and suggest a pronounced poleward migration over the past thirty years in the average latitudes at which tropical cyclones achieve their lifetime-maximum intensity. This shift in cyclogenesis away from tropical regions is plausibly linked to the expansion of the tropical zone as the result of anthropogenic factors (Kossin, Emmanuel, and Vecchi 2014).

Typhoon Haiyan, however, was not solely attributed to climate change. Another, much more familiar trope also surfaced as a causal agent or culprit. Some international news reports blamed the actions or inactions of humans, or, to put it another way, on Filipinos, for the tropical cyclone and held that their poverty, mismanagement, and corruption was responsible for the extent of the destruction that ensued. Brian McNoldy, a senior research associate at the University of Miami is reported to have attributed 75–80 percent of the devastation to human causes (Borenstein 2013). People are vulnerable, the meteorologists argue, because they have moved in large numbers to exposed coastal areas where they live in poorly constructed houses. Four out of ten Filipinos now reside in storm-prone cities of more than 100,000, according to a recent UN HABITAT study (2012). Tacloban is no exception: the population has tripled in the past forty years from 76,000 to 221,000 inhabitants. About a third of these people live in houses with wooden exteriors, and one in seven has a grass roof. The mangrove forest, too, that used to protect the city from storms has largely been felled (Lean 2013). Such cities, according to Richard Olson, the director of the Extreme Events Institute of Florida University, are “urban time bombs” (Borenstein 2013).

But just as human factors can make a disaster worse, so, it is implied, do people have it in their power to make themselves more resilient by reducing the risk “through stronger buildings, better warnings and a quicker government response” (“Humans to Blame for Scale of Devastation Caused by Typhoon Haiyan Say Experts!” 2013). An alliance of developing nations like the Philippines, the Group of 77 plus China, are now demanding compensation from the worst polluting countries for the damage done to the climate and the plight they find themselves in. Advocates hope to see \$100 billion a year pledged to a Green Climate Fund established in 2010 with the intention of helping poorer countries reduce their emissions and prepare for climate change. While these fund-raising goals remain little more than aspirational at present (Myers and Kulish 2013), the sheer destructive power of Typhoon Haiyan “all but assures that the super typhoon will become a symbol of climate change for years to come, just as Hurricane Katrina and Super Storm Sandy have” (Walsh 2013, 20).

Typhoon Yolanda

If, at an international level, Typhoon Haiyan remains very much a narrative of climate change underlain with a sense that the fault, at least partly, was self-inflicted, Typhoon Yolanda, on the other hand, has a storyline that is rooted in the past and is played out in the arena of national and local politics where accusations of incompetence are used to castigate electoral rivals and gain the advantage for one's faction or clan (often one and the same thing). It is not that climate change is completely absent from the debate—it is just that it is not really applicable in the local context. At a more popular level, the tale is about a people once confident in their capacity to manage whatever the storm had to throw at them, as they had done so many times before, but subsequently humbled by a divine reminder of their vulnerability in the face of natural forces.

Like Typhoon Haiyan, too, Yolanda had its media moment that, even though aired in an international setting, had its principal impact on a national audience. President Aquino's controversial interview with CNN's Christiane Amanpour on November 13, 2013, painted a much rosier picture of what was taking place in Tacloban than was being reported in both the national and international press. In particular, Aquino was attacked (especially in the social media) for his downplaying of police projections of the number of deaths from Yolanda and for casting blame for the slow response on local government. John Nery, a respected local columnist and author, argued, however, that it was not only Aquino who made mistakes in the interview. Amanpour, by attempting to define the Aquino presidency through his actions, was framing him in largely Western historical terms comparable to President George W. Bush and Hurricane Katrina in 2005 (Nery 2014). Nery also argued that the negative social media feedback to Aquino's answers was a manifestation of a lingering colonial mentality, a narrative that views Filipinos as still ensnared by the influence of centuries of foreign, and especially American, culture (Constantino 1970). Nery concluded, "Those of us who agreed with [Amanpour's] premise [of how Aquino's response to Yolanda could be legacy defining] had the wrong history in mind" since, in his view, no Philippine president had ever been "defined by his or her response to a national catastrophe" (Nery 2014)

Although the legacy of Typhoon Yolanda on Aquino's presidency remains uncertain, the narratives surrounding post-Yolanda politics must be seen in the context of the promise held by his landslide electoral victory in 2010. President Aquino ran under a platform of "Matuwid na Daan" (straight path or honest governance), to implement reforms and prosecute corrupt officials from the previous Gloria Macapagal-Arroyo (GMA)

administration (Quimpo 2014). Yet the discourse about the typhoon has become mired in political rivalries and claims and counterclaims that have much in common with the sleaze of former presidencies about them.

In particular, the physical storm became a political storm when Interior Secretary Mar Roxas reportedly warned Mayor Alfred Romualdez of Tacloban City, a day or two after the typhoon, to be “very careful because you are a Romualdez and our president is an Aquino” (“Transcript: Romualdez, Roxas Meet Post-Yolanda” 2013). Such incidents bring to the fore the issue of the role of family dynasties in what has been described as the “personalistic” and “dynastic” political culture in the Philippines (Aceron 2009, 9; Casiple 2012). Mayor Romualdez is the nephew of former first lady Imelda Romualdez-Marcos, widow of President Ferdinand Marcos (1965–1986). President Benigno Aquino III, on the other hand, is the son of martyred Marcos archcritic Benigno “Ninoy” Aquino Jr. and Corazon “Cory” Aquino, Ninoy’s widow who was catapulted into the presidency in the wake of the 1986 EDSA or People Power Revolution. In the Amanpour interview and on several other occasions, President Aquino has stressed that local governments are the first responders during disasters. In his defense, Romualdez retorted that his ability to respond had been impaired both by the magnitude of the calamity and by a reduction in municipal capabilities: many emergency service personnel and police officers either went missing or abandoned their posts to look after their own families. Under these circumstances, he continued, local government needs national intervention (*Tindog Tacloban* 2014; “Aquino, Romualdez Trade Barbs over Haiyan” 2013). Despite the serious issues of governance at stake here, the episode mainly evoked the long-standing political rivalry between the Cojuangco-Aquino and Romualdez-Marcos dynasties and how paternalistic narratives continue to shape national and provincial politics in the Philippines.

The politicization of Yolanda, however, was also very much a local affair as disputes between national and provincial officials were mirrored in *barangay* (district)-level problems to do with relief distribution. There were claims that *barangay* officials from opposition parties were denied relief goods and other forms of aid because of their rival political affiliation. One such case occurred in the *barangay* of Guindapanan in the municipality of Palo (situated directly south of Tacloban City), where more than a thousand people had been killed on November 8. The mayor of Palo, Remedios Petilla, and mother of both the provincial governor and a minister in Aquino’s cabinet, decided not to distribute aid through the *barangay* captain of Guindapanan, who happened to be an ally of former first lady Imelda Marcos. While the scale and veracity of these kinds of allegations are difficult to confirm, a Reuters report based on more than fifty

interviews across the province concluded, “A picture emerges of an aid campaign riven with rivalries and vulnerable to abuse” (Layne and Mogato 2013). This funneling of resources has been termed locally “color-coding” or “the selective distribution of aid along political lines, or by the colors associated with different parties,” effectively the selective distribution of relief items to friends and supporters of local officials (Layne and Mogato 2013; Cruz 2013, 13). Perceived critics of *barangay* officials were simply not provided with relief items or were referred to adjacent *barangays* for aid (Abrematea, interview, 2014; Cayanong, interview, 2014).

Bickering by government officials is seen as one of the principal reasons for the lack of leadership on the ground in the critical days after Yolanda made landfall. Preexisting factional and personal rivalries were compounded by problems of logistics and communications, leading international aid workers to observe, “Officials did not have a full grasp of the magnitude of the devastation and could provide no guidance on when basic emergency needs could be met” (Esguerra and Ubac 2013). Such impressions were only confirmed by the presence in devastated areas of politicians with known presidential ambitions (e.g., Secretary Mar Roxas of the Department of Interior and Local Government, Vice President Jejomar Binay, and Senator Bongbong Marcos, among others). Rather than overseeing the relief efforts, their actions were interpreted as early politicking for the 2016 presidential election as relief goods were allegedly repacked into bags featuring the names of the various contenders for high office (Cruz 2013).

In its 2014 report, *Assessment of Disaster Risk Reduction and Management at the Local Level*, the Commission on Audit blamed patronage politics for the government’s failure to protect and aid poor Filipinos in the country’s high-risk zones despite the enactment of the new Philippine Disaster Risk Reduction and Management Act 2010. “As a result of patronage,” the report affirmed, “decisions are based on electoral considerations rather than on evidence of technical assessments” (Commission on Audit 2014, 20). Meantime, most Filipinos were glued to their TV screens watching the Senate testimony of the detained Janet “Jenny” Lim-Napoles. Napoles is accused of being the mastermind behind the Priority Development Assistance Fund scam that allegedly allowed members of Congress to channel discretionary spending through fake nongovernmental organizations (NGOs) on nonexistent projects and pocket the money for themselves (Carvajal 2013). Some survivors even cited the Senate hearing, aired the day before the typhoon struck, as a factor that distracted them from making proper preparations for the storm.

Apart from the mutual recriminations and finger-pointing among politicians, blame was also leveled at the most vulnerable: the many informal

settlers who live in the most exposed coastal slums. These communities often have very tenuous relations with local government administrators, and are seen as either sources of votes or as obstacles to development. Their inhabitants are often characterized as overly stubborn, people who generally resist government advice and ignore official warnings, and who, in the case of Yolanda, failed to evacuate when repeatedly told about the dangers (*Tindog Tacloban* 2014).

Rather surprisingly, this is a view largely shared by many of the survivors. A common reason residents cite for the high number of deaths among such settlements is their *kumpyansa*, or overconfidence, in their capacity to withstand what turned out to be the strongest typhoon the region had faced in living memory. The people of the eastern Visayas are accustomed to typhoons but the collective memory of the storm surges that sometimes accompany such events and what they should do has largely disappeared from local narratives (Lotilla 2013; Montalvan 2013). Thus, although people were prepared for flooding and expected damage to their homes and property, they did not expect the six-meter storm surge. It was this wave of water, subsequent reports have confirmed, that caused the greatest number of casualties. It is estimated that “94% of the casualties along the coast died from the storm surge” (Neussner 2014, 45). Many residents also evidently failed to understand exactly what a storm surge was and the dangers posed to them and their families. One survivor later told an interviewer, “I don’t understand ‘storm surge.’ If they said tsunami or tidal wave we should have evacuated” (Neussner 2014, 44). The aftermath of the storm, too, led others to doubt themselves and their worthiness. For many, Yolanda was God’s punishment for their shortcomings. “Guin kastigo kita” (we were punished), said one elderly woman to a friend. Teenagers sang or played through their cell phones a popular Filipino rap song called “Lord, Patawad” (Lord, forgive us), and spray-painted the song’s title on the walls of destroyed homes, buildings, and ships washed inland. The spread of a scientific paradigm that explains typhoons in terms of rising sea surface temperatures and climate change has not greatly diminished alternative views that explain calamities as the work of divine agency or as manifestations of a capricious nature (Bankoff 2004).

Whethering the Storm

Whether one calls it Typhoon Haiyan or Typhoon Yolanda matters because how societies make sense of disasters contributes to their impact. People’s behavior is shaped not only by their past experience of disaster, but

also by “a cultural narrative that creates a set of expectations and sensitizes people to some problems more than others” (Furedi 2007, 485). These narratives also change over time to reflect shifts in cultural norms and perceptions; what constitutes a disaster and how it is explained also has a history. Understanding the changing nature of how disasters are visualized is significant because it is related to how people react to such phenomena. According to E. L. Quarantelli, how societies think about disasters passes through three phases that are chronological in principle if often overlapping in practice.

First, a culture may exhibit a fatalistic acceptance of disasters, historically ascribing what happens to acts of God, an attribution that is often enshrined in a society’s legal system. The implication is that such acts are random and that no one can do anything practical to avoid them: disasters are simply to be endured. Such fatalistic attitudes to disasters, Quarantelli (2000) argues, did not encourage the development of innovative social arrangements to better prepare for such events. These beliefs gave way after the destruction of Lisbon in 1755 to a second perception—at least in Western societies: societies are able to adjust and modify the impact of disasters to some degree. Russell Dynes points to the development of earthquake-resistant architecture around the mid-eighteenth century as symptomatic of such a development (Dynes 1999). The materials used and the construction techniques employed reduce the impact on structures: while the hazard may be uncontrollable, measures can nevertheless be taken to decrease the risk and reduce their consequences.⁵ By the second half of the twentieth century, disasters were seen as neither the signs of divine retribution nor as random acts of nature, but rather as the inevitable outcome of inappropriate human decisions that put people at risk. As such, they can be mitigated if not altogether prevented by forethought and planning. Disasters are perceived more as acts of society than as acts of God, and can be averted or, at least, moderated by changes to the structure of the social systems that gave rise to them (Quarantelli 2000). Increasingly, too, there is a search for a scapegoat on whom the disaster can be blamed. Responsibility is alternately attributed to the neglect of government officials, the corporate greed of big business, or the carelessness of operatives who are held morally as well as legally responsible for the consequences (Furedi 2007, 483).

Frank Furedi argues that the perceptions of what causes a disaster has a cultural script that seeks to endow extreme events with meaning. “For most people,” he continues, “the really important question is not how but why a disaster occurred” (Furedi 2007, 484). To a certain extent, we can see evidence of this cultural script in both the international and the domestic discourses surrounding Typhoon Haiyan and Typhoon Yolanda.

In the case of Typhoon Haiyan, the disaster in the Philippines is embedded into a wider debate about global warming as a foretaste of what is likely to come. Blame is diffused across all of humanity, even if this is contested and there is a vigorous effort to shift responsibility onto the energy-hungry, carbon-emitting economies of the developed world. This is more a contest in political power than an engagement with the real issues inherent in climate change and is an attempt to secure compensation on behalf of aggrieved parties. The cultural narrative that surrounds Typhoon Haiyan also partly fits into a familiar trope that renders large parts of the world as vulnerable by blaming the poverty and inequitable distribution of material goods of the people living in these regions squarely on nature. That this nature might be the product of their own lack of resilience becomes diffused amidst declarations to do with the common plight of humanity. The opprobrium that might otherwise attach to an economic system created by and largely benefiting the West is largely lost amidst scientific and technical discussions about purely climatic and scientific phenomena (Bankoff 2001).

Typhoon Yolanda, on the other hand, is another matter. It, too, has a political as well as a social dimension. As might be expected, however, both these discourses are on a different level of scale, one in which the local and national feature prominently and international debates remain in the background. In the public arena, debates are personalistic and dynastic, reflecting the political culture of the Philippines and the rivalry that exists between elite families from the president down to the local mayor. The dominant political clans, particularly the Aquinos and Romualdezes, have made Typhoon Yolanda a scapegoat for their ambitions, each accusing the other of manipulating aid for their own benefits, and blaming their opponents for inadequate preparations, bungled relief distribution, and favoring their own supporters.⁶ This political finger-pointing, however, is underscored by a strong sense of self-blame and unworthiness that views the typhoon and its aftermath as God's punishment for people's *kumpayansa*, or overconfidence, and their lack of belief. The cultural narrative to do with Typhoon Yolanda does not really engage with Western discourses of risk but is more to do with identity, citizenship, power, and divine providence. Nature has surprisingly little to do with what's happening and is reduced to more of a background context.

Why these different perceptions matter is more than of just academic interest because how disasters are framed influences the way people respond to them. Typhoon Haiyan, as symptomatic of climate change, is linked to variability in climate that no one can halt but whose worst effects may be minimized through concerted actions by the international community. In the short to medium term though, it is generally accepted

that little can be done to avert the incidence of extreme weather where higher-intensity cyclones and storm surges are likely to become more frequent. At best, improvements to the forecasting services and evacuation procedures, and retreat from the most exposed coastal areas are all the immediate remedies on offer and these are largely within the competence of national not international agencies. The international community can debate, commiserate, and, perhaps, provide a certain amount of aid but that is where its responsibility ends. Typhoon Yolanda, on the other hand, is very much a national affair and is part of an ongoing political struggle at the national, provincial, and local levels for power: disasters are viewed more as tests of governance that can be used as so much ammunition to strike at one's political rivals. The typhoon is perceived not so much as an environmental phenomenon or even a social construction, but rather as a political tool. Accusations of incompetence and corruption mean that aid and reconstruction become matters of political expediency providing powerful motivation when the spotlight is firmly fixed on them, but losing momentum and dissipating as soon as public interest lapses. There is, therefore, little motivation to reduce vulnerability over the long term. Nor is this political discourse confined to only the electoral process but expands to include questions of self-identity and citizenship at the local, ethnic, and national levels. Filipino life and culture is ineluctably entwined with the experience of hazard, as Miguel Selga so poignantly pointed out some eighty years ago.

On a theoretical level, the discourses about Typhoons Haiyan and Yolanda are focused less on vulnerability and more on resilience. In an age ever more alarmed by the prospect of climate change, the issue of vulnerability, it is suggested, should be turned around and approached from a more positive viewpoint. Societies are no longer simply viewed as vulnerable with all its associated negative connotations but people are seen as primarily resilient; they have the capacities to organize, resist, learn, change and adapt (Handmer 2003). The stress in the developed world is increasingly on the need for adaptation and necessary adjustment as the only really practical measures: what will make societies more resilient. For those in the developing world, however, the issue is still much more about what renders them vulnerable, more especially as that condition is seen as largely imposed by the West on the rest. Moreover, this status all but absolves them of any responsibility for climate change and allows countries, more especially the BRICs, to continue polluting at a reckless pace all in the name of social justice and economic parity. Just as there are two discourses about the typhoon, an international and a national, so, too, the paradigms evoked to explain global disasters reflect a theoretical

distinction that emphasizes capacity on the one hand and disenfranchisement on the other. Typhoon Haiyan and Typhoon Yolanda might be one and the same tropical cyclone, but the storm has a dual nature that represents fundamental differences in the way disasters are viewed and acted on from the standpoint of the developed and the developing worlds. In this sense, tropical cyclones are as much political forces as they are forces of nature.

Greg Bankoff has worked and published extensively on both the historical dimension of how societies adapt to risk and on contemporary civil defense and emergency management practices in Asia, Australasia, and, more recently, in Europe. His most recent publications include coauthoring *The Red Cross's World Disaster Report 2014: Focus on Culture and Risk* and a companion coedited volume entitled *Cultures and Disasters: Understanding Cultural Framings in Disaster Risk Reduction* (2015). He is professor of modern history at the University of Hull, United Kingdom.

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Notes

1. Names are drawn from a list of 140 nominations submitted by the fourteen Western North Pacific and South China Sea region states that compose the World Meteorology Organization's Typhoon Committee.
2. In all, three destroyers capsized and sank, nine other warships required repair, and 146 aircraft were either wrecked or washed overboard. A total of 790 sailors lost their lives (Morison 2012, 65–81).
3. The list is simply entitled "Floods in the Philippines 1691–1911." It does not seem to have been composed by Miguel Selga but makes frequent reference to his works and so presumably postdates him.
4. There is some controversy as to the extent of the damage caused on this occasion.
5. Seismic architecture, however, has a longer pedigree than the *pombalino* or *casa baraccata* architecture of Portugal or southern Italy referred to by Dynes and dates back, at least, to Ottoman and perhaps even Byzantine structural forms (Bankoff 2015; Duggan 1999).
6. The present president of the Philippines is an Aquino, President Benigno "Noynoy" Aquino III. He is the son of former president Corazon Aquino (1986–1992), incidentally a Cojuangco, and the wife of former opposition leader and martyr Benigno Aquino Jr. who was gunned down at Manila's international airport in 1983. The present mayor of Tacloban is Alfred Romualdez, scion of a family that has dominated Leyte's politics for decades. He is the son of a former mayor of the city who is the younger brother of First Lady Imelda Marcos who, in turn, was the wife of former president Ferdinand Marcos (1965–1986).

Interviews

- Abrematea, Nestor. 2014, June 10. Publisher of the *Tacloban Star* newspaper. In Tacloban City, Philippines.
- Cayanong, Cesar. 2014, September 9. Artist/signboard maker. In Tacloban City, Philippines.

References

- “15,000 die in Philippine storm.” 1912. *Washington Herald*, November 30, 1912.
- Aceron, Joy. 2009. “It’s the (Non-) System, Stupid!: Explaining ‘Mal-development’ of Parties in the Philippines.” *Reforming the Philippine Political Party System* (Friedrich Ebert Stiftung (FES), 5–22. <http://library.fes.de/pdf-files/bueros/philippinen/07131.pdf>
- Alexander, Harriet. 2013. “Is Typhoon Haiyan the Result of Climate Change?” *The Telegraph*, November 12, 2013. <http://www.telegraph.co.uk/news/worldnews/asia/philippines/10444510/Is-Typhoon-Haiyan-the-result-of-climate-change.html>
- Algue, P. Jose. 1898. *El Baguio de Samar y Leyte, 12–13 de Octubre de 1897*. Manila: Foto-tipografía de J. Marty.
- “Aquino, Romualdez Trade Barbs over Haiyan.” 2013. *Rappler*, November 19, 2013. <http://www.rappler.com/video/reports/44023-haiyan-yolanda-aquino-romualdez-disaster>
- Archives of the Manila Observatory (AMO). Floods in the Philippines 1691–1911, *Archives of the Manila Observatory* Box-10, 37.
- Bankoff, Greg. 2001. “Rendering the World Unsafe: ‘Vulnerability’ as Western Discourse.” *Disasters*, 25 (1): 19–35.
- . 2003. *Cultures of Disaster: Society and Natural Hazard in the Philippines*. London: Routledge Curzon Press.
- . 2004. “In the Eye of the Storm: The Social Construction of the Forces of Nature and the Climatic and Seismic Construction of God in the Philippines.” *Journal of Southeast Asian Studies* 35 (1): 91–111.
- . 2007. “Storms of History: Society and Weather in the Philippines 1565–1930.” In *Water in Maritime Southeast Asian Societies, Past and Present*, edited by Peter Boomgaard, 153–183. Leiden, Netherlands: KITLV Press.
- . 2015. “Design by Disasters: Seismic Architecture and Cultural Adaptation to Earthquakes.” In *Cultures and Disasters*, edited by Fred Krueger, Greg Bankoff, Terry Cannon, and Lisa Schipper, 53–71. London: Routledge.
- Bello, Walden. 2013. “Haiyan’s Message: Climate Change Is Upon Us—and the Danger is Urgent,” *The Nation*, December 9, 2013: 4.
- Borenstein, Seth. 2013. “Experts: Man, Nature Share Typhoon Tragedy Blame.” *Associated Press*, November 11. <http://bigstory.ap.org/article/experts-man-nature-share-typhoon-tragedy-blame>
- Brown, Sophie. 2013. “The Philippines Is the Most Storm-Exposed Country on Earth.” *Time* November 11, 2013. <http://world.time.com/2013/11/11/the-philippines-is-the-most-storm-exposed-country-on-earth/>
- Carvajal, Nancy C. 2013. “NBI Probes P10-B Scam: Pork, Gov’t Funds Used in Ghost Projects.” *Philippine Daily Inquirer*, July 12, 2013. <http://newsinfo.inquirer.net/443297/nbi-probes-p10-b-scam>

- Casiple, Mon. 2012. “Dynastic Politics.” [Blog] *Mon Casiple’s Weblog on Philippine Politics*. <http://moncasiple.wordpress.com/2012/10/06/dynastic-politics/>
- Commission on Audit. 2014. *Assessment of Disaster Risk Reduction and Management (DRRM) at the Local Level 2014*. http://www.coa.gov.ph/disaster_audit/doc/Local.pdf
- Constantino, Renato. 1970. “The Mis-Education of the Filipino.” *Journal of Contemporary Asia* 1 (1): 20–36.
- Cruz, Isagani. 2013. “Why the Suffering?” *Philippine Star*, November 21, 2013.
- Daniell, James, Bernhard Mühr, Trevor Girard, André Dittrich, Joachim Foringer, Christian Lucas, and Tina Kunz-Plapp. 2013. *Super Typhoon Haiyan/Yolanda—Report No. 2*. CEDIM Forensic Disaster Analysis Group, Centre for Disaster Management Risk Reduction Technology. http://earthquake-report.com/wp-content/uploads/2013/10/CEDIM_FDA_Haiyan_Rep2.pdf
- Dañguilan-Vitug, Marites. 1993. *Power from the Forest: The Politics of Logging*. Manila: Philippine Centre for Investigative Journalism.
- Dorn, William G. van. 1974. *Oceanography and Seamanship*, 2nd ed. Centerville, MD: Cornell Maritime Press.
- Duggan, T. M. P. 1999. “The Hatil and the Lessons of History.” *Turkish Daily News*, August 25, 1999. <http://www.hurriyetdailynews.com/default.aspx?pageid=438&n=the-hatil-and-the-lessons-of-history-1999-08-25>
- Dynes, Russell R. 1999. *The Dialogue between Voltaire and Rousseau on the Lisbon Earthquake: The Emergence of a Social Science View*. Preliminary Paper # 294. Newark: Disaster Research Center, University of Delaware.
- Elsner, James Brian, and Kam-biu Liu. 2003. “Examining the ENSO-typhoon Hypothesis.” *Climate Research* 25: 43–54.
- Emanuel, Kerry A. 2013. “Downscaling CMIP5 Climate Models Shows Increased Tropical Cyclone Activity over the 21st Century.” *Proceedings of the National Academy of Sciences* 30 (110): 12219–12224.
- Esguerra, Christian V., and Michael Lim Ubac. 2013. “Who’s in Charge Here?” *Philippine Daily Inquirer*, November 14, 2013. <http://newsinfo.inquirer.net/526877/whos-in-charge-here>
- Furedi, Frank. 2007. “The Changing Meaning of Disaster.” *Area* 39 (4): 482–489.
- García-Herrera, Ricardo, Pedro Ribera, Emiliano Hernández, and Luis Gimeno. 2007. “North-West Pacific Typhoons Documented by the Philippine Jesuits, 1566–1900.” *Journal of Geophysical Research* 112: 1–12.
- Handmer, John. 2003. “We Are All Vulnerable.” *Australian Journal of Emergency Management* 18 (3): 55–60.
- Hirth, Frederick. 1880. “The Word ‘Typhoon.’ Its History and Origin.” *Journal of the Royal Geographical Society of London* 50: 260–267.
- “Humans to Blame for Scale of the Devastation Caused by Typhoon Haiyan, Say Experts.” 2013. *South China Morning Post*, November 13, 2013. <http://www.scmp.com/news/asia/article/1354758/human-factors-played-part-haiyan-tragedy-philippines-say-experts>
- Intergovernmental Panel on Climate Change (IPCC). 2015. *Fifth Assessment Report (AR5): Impacts, Adaptation, and Vulnerability Part A: Global and Sectoral Aspects*. Intergovernmental Panel on Climate Change. <http://www.ipcc.ch/report/ar5/>
- Japan Meteorological Agency. n.d. *Climatology of Tropical Cyclones*. Accessed May 6, 2014. <http://www.jma.go.jp/jma/jma-eng/jma-center/rsmc-hp-pub-eg/climatology.html>

- Knutson, Thomas R., Jones L. McBride, Johnny Chan, Kerry Emanuel, Greg Holland, Chris Landsea, Isaac Held, James P. Kossin, A. K. Srivastava, and Masato Sugi. 2010. "Tropical Cyclones Climate Change." *Nature Geoscience* 3: 157–163.
- Kossin, James P., Kerry A. Emmanuel, and Gabrielle A. Vecchi. 2014. "Poleward Migration of the Location of Tropical Cyclone Maximum Intensity." *Nature* 509 (May 15): 349–352.
- Layne, Nathan, and Manuel Mogato. 2013. "Insight-Small-town Squabbles Blamed for Stalling Philippine Storm Aid." *Reuters*, December 13, 2013. <http://uk.reuters.com/article/2013/12/29/uk-philippines-typhoon-aid-insight-idUKBRE9BS00I20131229>
- Lean, Geoffrey. 2013. "The Truth behind Typhoon Haiyan: Climate Changed Played a Part in Creating the Surge of Water That Swept through Tacloban." *The Telegraph*, November 15, 2013. <http://www.telegraph.co.uk/earth/environment/climatechange/10452258/The-truth-behind-Typhoon-Haiyan.html>
- Lepage, Michael. 2013. "The Heat Is Still On." *New Scientist* 2946: 220.
- Liu, Kam-biu, Caiming Shen, and Kin-sheun Louie. 2001. "A 1000-Year History of Typhoon Landfalls in Guangdong, Southern China, Reconstructed from Chinese Historical Documentary Records." *Annals of the Association of American Geographers* 91 (3): 453–464.
- Longshore, David. 1998. *Encyclopaedia of Hurricanes, Typhoons, and Cyclones*. New York: Facts on File.
- Lotilla, Raphael. 2013. "Flashback: 1897, Leyte and A Strong Typhoon." *Rappler*, November 20, 2013. <http://www.rappler.com/move-ph/issues/disasters/typhoon-yolanda/44062-leyte-1897-typhoon>
- Montalvan, Antonio II. 2013. "Samar-Leyte More than Thrice," *Philippine Daily Inquirer*, December 29, 2013. <http://opinion.inquirer.net/68409/samar-leyte-more-than-thrice>
- Morison, Samuel Eliot. 2012. *The Liberation of the Philippines: Luzon, Mindanao, The Visayas 1944–1945*. Annapolis, MD: Naval Institute Press.
- Myers, Stephen, and Nicholas Kulish. 2013. "Growing Clamour about Inequities of Climate Crisis." *New York Times*, November 16, 2013.
- Nery, John. 2014. "The Amanpour Interview: Framing Aquino." *Philippine Daily Inquirer*, February 17, 2014. <http://opinion.inquirer.net/71691/the-amanpour-interview-framing-aquino>
- Neussner, Olaf. 2014. *Assessment of Early Warning Efforts in Leyte for Typhoon Haiyan/Yolanda*. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), http://www.preventionweb.net/files/36860_36860gizassessmentofearlywarningyol.pdf
- Quarantelli, E. L. 2000. *Disaster Planning, Emergency Management and Civil Protection: The Historical Development of Organised Efforts to Plan for and Respond to Disasters*. Preliminary Paper # 301. Newark: Disaster Research Center, University of Delaware.
- Quimpo, Nathan Gilbert. 2014. "Fighting Corruption through Patronage?" *Manila Review*, February 21, 2014. <http://themanilareview.com/issues/view/fighting-corruption-through-patronage>
- Rantucci, Giovanni. 1994. *Geological Disasters in the Philippines: The July 1990 Earthquake and the June 1991 Eruption of Mount Pinatubo*. Rome: Dipartimento per l'informazione e l'editoria.
- Ribera, Pedro, Ricardo García-Herrera, Luis Gimeno and Emiliano Hernández, 2005. "Typhoons in the Philippine Islands, 1901–1934." *Climate Research*, 29: 85–90.

- Ribera, Pedro, Ricardo García-Herrera and Luis Gimeno. 2008. "Historical Deadly Typhoons and Philippines." *Weather* 63 (7): 194–199.
- Schiermeier, Quirin. 2013. "Did Climate Change Cause Typhoon Haiyan?" *Nature*, November 11, 2013. <http://www.nature.com/news/did-climate-change-cause-typhoon-haiyan-1.14139>
- Selga, Miguel. 1935. "Tifonitis," *Revista de la Sociedad Astronómica de España y América* 25 (176–177): 54–58.
- . 1936. *Charts of Remarkable Typhoons in the Philippines 1902–1934; Catalogue of Typhoons 1348–1934*. Manila: Manila Weather Bureau.
- Solá, Marcial. 1903. *Meteorological Service of the Philippine Islands: Report of Its Establishment and Development under the Spanish Government and Its Reorganisation under the Government of the United States*. Manila: Bureau of Printing.
- Tindog Tacloban [Rise up Tacloban]. 2014. *The Mayor of a Town Rising Up from Typhoon Haiyan | Guardian Investigations*. Dir. Chris Kelly. [Online video clip]. <http://www.theguardian.com/world/video/2014/feb/06/tindog-tacloban-typhoon-haiyan-philippines-video>
- "Transcript: Romualdez, Roxas Meet Post-Yolanda." 2013. *Rappler*, December 14, 2013. <http://www.rappler.com/nation/45914-transcript-romualdez-roxas-meeting-yolanda>
- "Typhoon Haiyan: Is Climate Change to Blame?" 2013. *The Week*, 12 November, 2013. available at: <http://www.theweek.co.uk/world-news/typhoon-haiyan/56033/typhoon-haiyan-climate-change-blame> (accessed 9 July 2014).
- Udías, Agustín. 2003. *Searching the Heavens and the Earth: The History of Jesuit Observatories*. Dordrecht, Netherlands: Kluwer Academic Publishers.
- UN HABITAT. 2012. *State of the World's Cities 2012/2013: Prosperity of Cities*. Nairobi: United Nations Human Settlements Programme (UN-HABITAT).
- Vidal, John. 2012. "Will Philippines Negotiator's Tears Change Our Course on Climate Change?" *The Guardian*, December 6, 2012. <http://www.theguardian.com/global-development/poverty-matters/2012/dec/06/philippines-delegator-tears-climate-change>
- Vidal, John and Damian Carrington. 2013. "Is Climate Change to Blame for Typhoon Haiyan?" *The Guardian*, November 13, 2013. <http://www.theguardian.com/world/2013/nov/12/typhoon-haiyan-climate-change-blame-philippines>
- Vida, John and Adam Vaughan. 2013. "Philippines Urges Action to Resolve Climate Talks Deadlock after Typhoon Haiyan." *The Guardian*, November 12, 2013. <http://www.theguardian.com/environment/2013/nov/11/typhoon-haiyan-philippines-climate-talks>
- Walsh, Brian. 2013. "Climate Change Didn't Cause Super Typhoon Haiyan: But the Storm Is Still a Reason to Fight Warming." *Time* 182 (November 11): 20.
- Walsh, Brian, Dan Kedmey, Per Lijas, and Emily Rauhala. 2013. "The Typhoon's Toll." *Time* 182 (November 25): 22.
- Withnall, Adam. 2013. "Typhoon Haiyan Overshadows UN Climate Change Talks in Poland" *Independent*, November 11, 2013. <http://www.independent.co.uk/news/world/asia/typhoon-haiyan-overshadows-un-climate-change-talks-in-poland-8934115.html>