Who Gave You the Right?:
Exploring Power and Politics in Journalism and
Academic Work Chronicling Hurricane Maria

Amy Chew[1,2], Gabriela C. Delgado-Fernandini[3,2], Jamario Cantrell[4,2], and Daniel Carter[5,2]

[1] University of Michigan, Ann Arbor MI 48109, USA
[2] The iSchool Inclusion Institute, Pittsburgh PA 15260, USA
[3] University of Puerto Rico, San Juan Puerto Rico 00925
[4] Vanderbilt University, Nashville TN 37235, USA
[5] Texas State University, San Marcos TX 78666, USA
amychew@umich.edu

Abstract. Hurricane Maria impacted Puerto Rico on September 20, 2017 and caused severe damage to the island. During the year after Hurricane Maria, government agencies and news organizations struggled to arrive at a consensus regarding the hurricane's death toll. The early death estimates that were severely underreported affected the amount of relief that Puerto Rico received from government institutions, as well as from private groups. As a result, it is imperative to understand how these consequential numbers were constructed following Hurricane Maria. We interviewed journalists and academic researchers who produced and disseminated information following Hurricane Maria and considered the role that these individuals played in communicating the number of deaths caused by the hurricane, how their methods differed, and how these factors contribute to the production of death toll numbers and narratives. We discuss our results in the context of validation and the consequences of colonization on information production and dissemination.

Keywords: Crisis Communication, Journalism, Colonialism.

1   Introduction

The island of Puerto Rico was hit by Hurricane Maria on September 20, 2017 after being hit by Hurricane Irma approximately a week earlier. Following Hurricane Maria, the lack of access to basic needs resulted in substantial loss of life. Two weeks after the hurricane, U.S. President Donald Trump visited the island and emphasized that only 16 people had died as a result of the storm. This number did not reflect the scale of destruction of Hurricane Maria and it took nearly a year for Puerto Rico Governor Ricardo Roselló to declare the official death toll to be 2,975.

Crisis communication and the estimation of deaths is critical in garnering adequate aid following natural disasters. The goals of crisis communication are to reduce un-

certainty and help resolve the harm that a specific crisis brings to communities by informing the community about the key information concerning the crisis [1]. In the absence of proper crisis communication, harm to communities can be exacerbated [2]. During the year after Hurricane Maria, government agencies and news organizations struggled to arrive at a consensus regarding the hurricane's death toll. The early death estimates that were severely underreported affected the amount of relief that Puerto Rico received from government institutions, as well as from private groups.

As a result, it is imperative to understand how these consequential numbers were constructed following Hurricane Maria. We interviewed journalists and academic researchers who produced and disseminated information following Hurricane Maria and considered the role that these individuals played in communicating the number of deaths caused by the hurricane, how their methods differed, and how these factors contribute to the production of death toll numbers and narratives. We discuss our results in the context of validation and the consequences of colonization on information production and dissemination.

1.1   Hurricane Maria

Hurricane Maria made landfall in Puerto Rico on September 20, 2017. The Puerto Rican government initially cited 16 deaths, a number also broadcast by U.S. President Donald Trump. Subsequently, the Federal Emergency Management Agency (FEMA) provided inadequate aid to the island. Although Hurricane Maria caused more damage than Hurricane Harvey in Texas and Irma in Florida during 2017, federal aid was more delayed and far more inadequate for Puerto Rico after Hurricane Maria's impact [3].

By the end of year, the director of the Department of Public Safety (DPS) in Puerto Rico announced that the deaths caused by the hurricane had risen to 64. As the Puerto Rican government provided official death counts, various news organizations simultaneously released death estimates challenging the official death toll. For example, a study released on November 20 conducted by CNN identified 499 deaths related to the aftermath of Hurricane Maria [4].

New death estimates came to light as the one year anniversary of Hurricane Maria approached. While the death toll provided by the government remained at 64, an independent study by researchers at Harvard University estimated 4,645 deaths during the three month period after the hurricane [5]. Researchers at George Washington University later released a study commissioned by the governor of Puerto Rico that estimated 2,975 deaths [6].

1.2   Natural Disasters and Mortality Data

While mortality data is often used to characterize the severity of natural disasters, critics point out instances where these numerical results have been unreliable or inaccurate. While these inaccuracies can stem from the technical challenges, they can also be politically motivated and have consequences for how governments and other organizations respond to disaster. Dynes and Rodriguez distinguish between death estimates caused by natural disasters that occur in developed and developing countries,

arguing that the number of deaths caused by Hurricane Katrina may have been exaggerated in order to receive adequate disaster assistance. In contrast, the initial death estimates of the Indian Ocean Tsunami in 2004 that impacted developing countries were significantly less than the actual deaths [7].

Quarantelli notes that inaccurate death estimates in developing countries occur because they are "affected both by deliberate distortions and technical problems in generating correct figures" [8]. These estimates can be exaggerated by local authorities in an effort to garner more disaster relief. In attracting more international attention, governments seek to "[profit] from foreign assistance [by magnifying death tolls] so as to elicit a higher inflow of response resources, less pressure from international creditors and better longer-term borrowing conditions" [qtd. in 8]. On the other hand, death estimates in developing countries may be denied or drastically reduced because the lives of individuals from conflicting ethnic groups and minority groups are not included in death counts [8].

2   Methods

We conducted six interviews over the course of a three month period from November 2018 through January 2019. Interview participants were split between three professional journalists and three academic researchers who authored or assisted in publications concerning Hurricane Maria's aftermath and death toll.

Following Glaser and Strauss's (1967) theoretical sampling method, our interview participants were selected based on a conceptual question and not by representativeness [9]. As a result, we selected interview participants based on a piece of politically prominent work they had completed related to Hurricane Maria's aftermath and death toll. We were motivated to select a diverse set of participants, academic researchers from various fields of expertise as well as various types of journalists. We reached out to eleven individuals who published or contributed to a piece of work that highlighted death tolls from different time periods. Of the eleven, six individuals agreed to be interviewed.

Prior to interviewing, participants consented to having their names and corresponding publication referenced. Interview questions explored participants' motivations for their project, their methods and processes in gathering relevant data to support their work and the process of disseminating work to the public. Interviews were semi-structured, ranged from 30 to 100 minutes and were conducted over the phone or through video conference call.

As a team of four, we read through all interview transcriptions and discussed commonalities observed among the interview participants. After an initial round of coding, we reviewed our data, noted codes that were vague or repetitive and revised them accordingly. We then reapplied our revised codes, following the incitation of reflexive analysis to continuously engage with data in order to gain a deeper understanding as well as develop and refine findings [10].

Table 1. Participant details and their corresponding publications

	Name	Organization	Title of Article or Publication	Date
Professional Journalists	Amanda Holpuch	The Guardian	"Puerto Rico: Trump appears to complain about cost of relief effort"	October 4, 2017
	Omaya Sosa Pascual	Puerto Rico's Center for Investigative Journalism	"María's Dead in Puerto Rico are Underreported"	September 28, 2017
	Julio Ricardo Varela	Latino Rebels Latino USA	"117 People Listed Missing in Puerto Rico Since Hurricane Maria Hit Island"	October 12, 2017
Academic Researchers	Alexis R. Santos-Lozada, Ph.D	Pennsylvania State University	"Estimates of excess deaths in Puerto Rico following Hurricane María"	November 21, 2017
	Rafael Irizarry, Ph.D	Harvard University	"Mortality in Puerto Rico after Hurricane Maria"	July 12, 2018
	Elizabeth Andrade, Dr.P.H., M.P.H.	George Washington University	"Ascertainment of the estimated excess mortality from Hurricane Maria in Puerto Rico"	August 21, 2018

3 Findings

3.1 Roles

Role of Journalists. Journalists played especially critical roles in disseminating information quickly to the public when standard communication channels were severely damaged. For example, Omaya Sosa Pascual of Puerto Rico's Center for Investigative Journalism speaks about her response to Hurricane Maria and the information she published soon after Hurricane Maria had made landfall: "You have to remember, there was no power, no cell phone, no internet, no government offices. So they had no statistics. So everything had to be done, basically by foot, a lot of our roads were blocked. And we found many [...] specific cases of deaths related to the hurricane that were not in the official death toll list." Sosa recalls the immediate actions she took to gather and provide relevant information to the public just a week after Hurricane Maria made landfall. Sosa's prompt work highlighted the deaths caused by the hurricane and contradicted the official death toll at the time.

In another instance, Julio Varela, journalist for Latino USA, explains his experience interacting with MSNBC, an American television network. Varela recalls, "No

one was talking about the death count on September 30, 2017. No news outlets except for [the Puerto Rico Center for Investigative Journalism]…[Speaking to MSNBC], I was asked specifically about...a completely different question about the hurricane and I said 'Look I'm not talking about this. I'm talking about this.'" Varela also recalled telling colleagues, "This is the most important story in Puerto Rico right now...If you are not on the death toll, you are not really a journalist."

Role of Academic Researchers. As the controversy surrounding Hurricane Maria's death toll emerged, academic researchers from various institutions worked to validate claims that challenged the low death toll confirmed by the Puerto Rican government. Alexis Santos of the Pennsylvania State University estimated an excess death of approximately 1000 caused by Hurricane Maria. His team's estimation was released in November 2017, one month after Hurricane Maria, and was one of the earliest academic works that challenged the Puerto Rican government's official death count. Without academic contribution, Santos explains, "It would have been much of an uphill battle [for journalists]. They would have won for sure, but academic institutions still have officiality...There's still some respect for academics and professors and when they say all the things that the press have been saying by two professors, people [start] listening."

Similarly, Rafael Irizarry, Professor of Biostatistics at Harvard University, also spoke about the value of validity in communicating information. When asked about the journal they had submitted to, Irizarry notes the importance of the journal's name and reputation, "But among a government official or a journalist, the journal name has a humongous effect...I wasn't aware of how strong that effect is...of giving it legitimacy among journalists and many other people...Then they would write about it. I mean they want a high profile journal so they could get the attention of government."

Irizarry explains that when this study was published in a "high profile journal", it further substantiated the narrative that Hurricane Maria had caused many more deaths than what had been officially documented. When this level of legitimacy became present, journalists amplified the academic work because it aligned and supported the narratives they were producing about Hurricane Maria's death toll.

3.2   Methods for Producing a Death Toll Number

Methods of Journalists. Journalists counted the individual number of deaths or used individual anecdotes of Puerto Rican people to illustrate the destruction of Hurricane Maria. Amanda Holpuch of The Guardian published an early article discussing the death toll as well as President Trump's visit to Puerto Rico. During her visit to Puerto Rico, Holpuch collected single anecdotes from Puerto Ricans she would encounter in order to illustrate the hurricane's destruction. She recalls one interaction she had in Puerto Rico, "There had been no formal visit from government workers with food, medicine, or water. [...] I met a 90-year-old man who lives by himself in a poor area of town. He hadn't seen anyone for 6 days."

Omaya Sosa from Puerto Rico's Center of Investigative Journalism started her work two days after the hurricane when she heard stories from health care profession-

als about people dying in hospitals. Sosa compared what she was hearing from health care professionals to the official government death toll. She recalls, "The math just wouldn't add up, I mean, if two or three doctors were telling me eight, nine, ten cases within 24 to 48 hours and the governor is talking about sixteen deaths in the 78 municipalities, it made no sense."

In an effort to "start organizing the information on where the cases were happening [and] what kind of profile they had," Sosa began to build a database that identified discrete cases with details and information of every person who died due to Hurricane Maria.

Methods of Academic Researchers. Academic researchers utilized statistical methods to create an estimation of excess deaths caused by Hurricane Maria. Both the work produced by Alexis Santos of the Pennsylvania State University and Elizabeth Andrade of George Washington University followed this pattern, using data obtained from the Puerto Rico Institute of Statistics and the Puerto Rico Vital Statistics Registry.

It is important to note that both studies were released at different times after the hurricane's impact. While Santos had to estimate total mortality data for September and October 2017 at the time of his research, Andrade's later study had this data available. Similarly, Rafael Irizarry's work, conducted at Harvard, produced similar estimates based on publicly available data.

4   Conclusion

Broadly, the sources viewed as most valid came from outside of Puerto Rico. Consequently, those producing these studies did not experience the severity of Hurricane Maria or its aftermath. The series of published death tolls indicate that there is a discrepancy between the stories that get told and listened to and those that are ignored. Regardless of the work done by Puerto Rico's Center of Investigative Journalism (CPI) to collect stories of individual deaths—work that exemplifies the challenging conditions faced by Puerto Ricans following the storm—the most consequential studies were produced by universities in the mainland U.S. Although the CPI offered evidence of deaths that challenged official data, the government did not revise their death toll until a year later, following the study by researchers at George Washington University. This delay resulted in unnecessary deaths in the months after the hurricane.

As a result of the inaccurate mortality data used to characterize Hurricane Maria, disaster assistance like FEMA (Federal Emergency Management Administration) was severely inadequate for Puerto Ricans in need. This is especially notable in relation to Puerto Rico's status as an unincorporated U.S. territory. While Puerto Ricans are U.S. citizens, they lack representation in Congress, do not have the right to vote in presidential elections and suffer inequalities as "second class citizens."

From this perspective, power structures and dynamics stemming from colonization are embedded in the processes of data production and dissemination following Hurricane Maria. Puerto Rico's history of oppression by the U.S. translates into a disregard

for the dignity and rights of Puerto Ricans, which in turn develops internalized oppression in the form of "crisis of self-confidence," a belief in Puerto Rico's incapability to self-govern [11]. This was exemplified when the official death toll provided by the Puerto Rican government was revised only when the numbers were validated by an U.S. mainland university despite the immediate work being accomplished by Omaya Sosa of Puerto Rico's Center of Investigative Journalism. In light of this connection between colonization and the way crisis information is communicated in the aftermath of disaster, it is evident that there is a gap in crisis communication research that addresses how legacies of colonization affect the perceived validity of sources that collect and report crucial information. This is significant because it could give insight into how journalists and academics can improve the effectiveness of crisis communication within the context of colonial narratives, which affect how information is interpreted and disseminated to the public.

References

1. Palttala, P., Boano, C., Lund, R., Vos, M.: Communication gaps in disaster management: Perceptions by experts from governmental and non-governmental organizations. *Journal of Contingencies and Crisis Management*, *20*(1), 2-12 (2012).
2. Seeger, M. W.: Best practices in crisis communication: An expert panel process. *Journal of Applied Communication Research*, *34*(3), 232-244 (2006).
3. Willison, C. E., Singer, P. M., Creary, M. S., Greer, S. L.: Quantifying inequities in US federal response to hurricane disaster in Texas and Florida compared with Puerto Rico. *BMJ global health*, *4*(1), e001191 (2019).
4. Sutter, J., Santiago, L., Shah, K.: We surveyed 112 funeral homes to check the accuracy of the hurricane death toll. This is what we found. Retrieved from www.cnn.com (2017).
5. Kishore, N., Marqués, D., Mahmud, A., Kiang, M. V., Rodriguez, I., Fuller, A., ... Maas, L.: Mortality in puerto rico after hurricane maria. *New England journal of medicine*, *379*(2), 162-170 (2018).
6. Santos-Burgoa, C., Goldman, A., Andrade, E., Barrett, N., Colon-Ramos, U., Edberg, M., ... Zeger, S.: Ascertainment of the Estimated Excess Mortality from Hurricane Maria in Puerto Rico (2018).
7. Dynes, R. R., Rodriguez, H.: Finding and framing Katrina: The social construction of disaster. *The sociology of Katrina: Perspectives on a modern catastrophe*, 23-33 (2007).
8. Quarantelli, E. L.: Statistical and conceptual problems in the study of disasters. *Disaster Prevention and Management: An International Journal*, *10*(5), 325-338 (2001).
9. Glaser, B., G., Strauss, A. L.: Grounded theory: Strategies for qualitative research. Chicago, lL: *Aldine Publishing Company* (1967).
10. Srivastava, P., Hopwood, N.: A practical iterative framework for qualitative data analysis. *International journal of qualitative methods*, *8*(1), 76-84 (2009).
11. Malavet, P. A.: America's colony: the political and cultural conflict between the United States and Puerto Rico(Vol. 43). NYU Press (2004).