Support for Disaster Risk Reduction (DRR) Policies in the Bahamas after Hurricane Dorian

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The Puzzle:

Assertion (among scholars, govt. officials, media) that extreme events open "windows of opportunity" for major changes / reforms in public policy.

Is it true? If so, how? And for how long?



"Windows of Opportunity": Theories (Olson 2020)

A "**crisis or disaster**" that affects the "national mood" – Multiple Streams Approach (from Kingdon 1984 to Zahariadis 2014 and others)

An "**exogenous shock**" that affects public opinion – Advocacy Coalition Framework (from Sabatier and Jenkins-Smith 1993 to Jenkins-Smith et al. 2014 and others)

Or "**triggers**" that change how a problem is defined and the political and organizational agendas to deal with it – Punctuated Equilibrium Theory (from Baumgartner and Jones 1993 to Baumgartner, Jones, and Mortensen 2014 and others)



Analysis: Political Culture of DRR in the Bahamas

Assessing the impacts of a major hazard event/disaster (now two major hazard events) on public perceptions of risk and public opinion towards Disaster Risk Reduction policies and practices in the Bahamas:

- 2019 Hurricane Dorian
- 2020 COVID-19 Pandemic



Data: Survey Research in the Bahamas

LAPOP AmericasBarometer Wave 1: June 17 - Oct. 7, 2014

FIU / Public Domain

Wave 2: Sept. 26 - Oct. 12, 2019

• 5 weeks after Hurricane Dorian

Wave 3: Dec. 12 - Dec. 22, 2019

15 weeks after Hurricane Dorian

Wave 4: May 28 - June 29, 2020

 40 weeks after Hurricane Dorian / during COVID-19 pandemic (n=3,429)

(n=1,000)

(n=1,013)

(n=1,005)



2019 Hurricane Dorian

- Sept. 1-3, 2019
- Northern islands (Abaco & Grand Bahamas)
- Category 5, and slow-moving
- 370 people killed (includes missing/presumed dead); 150,000 people directly affected
- Approx. 13,000 homes damaged or destroyed
- Total cost of damage estimated at USD \$ 7 billion



2019 Hurricane Dorian





"In your opinion, what should be given higher priority: safer construction of homes or avoiding cost increases?"
(1) Safer construction of homes
(2) Avoiding cost increases
(3) [Don't read] Both

Waves 1-4

























Support for DRR Policies

"How much do you agree or disagree with this statement: 'Governments should spend more money to enforce building codes and construction regulations to make homes safer from natural disasters, even if it means spending less on other programs."" (1-7 scale)

Waves 2-4 only (not included in 2014 AB)



Support for DRR Policies

Mean Support for Govt. Spending to Enforce Building Codes / Construction Regs.

(interval; weighted)



2020 COVID-19 Pandemic

As of Sept. 2, 2020: 2476 confirmed cases 55 deaths (source: WHO)

Most cases and deaths are recent, since late July (following a "reopening" in early July and several partial reopenings since).

On June 15, 2020 (in middle of Wave 4 survey): 104 confirmed cases 11 deaths (source: WHO)

BUT: awareness of virus was already high and the economic impact was already severe in Q2 2020

- Tourism—70% of the Bahamas' GDP—mostly shut down in late March
- Unemployment rate tripled or quadrupled, reaching 30-40%
- 50% of households, 80% of low-income households, report job losses (IDB)

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Support for DRR Policies

Support for Govt. Spending on Building Codes & Public Health Progs. Compared, June 2020

(interval; weighted)



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Support for DRR Policies

Mean Support for Govt. Spending on Building Codes & Public Health Progs. , June 2020

(interval; weighted)



Disaster Risk / Risk Reduction: Hurricanes and Pandemics

Support for building codes / construction regs. and support for public health programs are significantly correlated...

• Spearman's rho = 0.34 (P>t = 0.000)

...as are perceptions of future storm / flood risk and future pandemic risk.

• Spearman's rho = 0.41 (P> t = 0.000)

Disaster Risk / Risk Reduction: Hurricanes and Pandemics

Beliefs about the effectiveness of DRR policies in preventing harm, if properly implemented

- "damage from Hurricane Dorian could have been prevented if building codes and construction regulations had been better enforced"
- "harm from the COVID-19 pandemic in the Bahamas could have been reduced if public health policies had been better enforced"

are less strongly (though still significantly) correlated across disaster types

• Spearman's rho = 0.18 (P> t = 0.000)

Disaster Risk / Risk Reduction: Hurricanes and Pandemics

What shapes individuals' perceptions of disaster risk and attitudes towards DRR policies—for different kinds of disasters—in the Bahamas?



Predicting Support for Building Codes / Regs. (ordered logit w/ linearized SE)

Variable		<u>Coeff.</u>	<u>Sig.</u>
Age		0.085	
Female		0.242	
Education		-0.191	***
Affected by Hurricane Dorian		0.026	
Perceived risk of storms/floods		0.318	***
Hurricane damage was preventable		1.147	***
5 .	* p<0.1 **	p<0.05 *** p	0<0.01



Predicting Support for Public Health Progs.

(ordered logit w/ linearized SE)

Variable	Coeff.	<u>Sig.</u>
Age	0.088	5
Female	0.435	*
Education	-0.089	
Affected by COVID-19 pandemic	0.142	
Perceived risk of pandemic	0.242	**
Pandemic harm was preventable	0.460	*
* p<0.1	** p<0.05 ***	p<0.01



Predicting Perceptions of Future Storm/Flood Risk (ordered logit w/ linearized SE)

Variable		<u>Coeff.</u>	<u>Sig.</u>
Age		0.058	
Female		-0.122	
Education		0.029	
Affected by Hurricane Dorian		0.044	
Affected by COVID-19 pandemic		0.326	***
Perceived risk of pandemic		0.810	***
* p	<0.1 **	p<0.05 *** p	0<0.01



Predicting Perceptions of Future Pandemic Risk (ordered logit w/ linearized SE)

Variable	Coeff.	<u>Sig.</u>
Age	0.048	
Female	0.053	
Education	-0.057	
Affected by Hurricane Dorian	-0.023	
Affected by COVID-19 pandemic	0.055	
Perceived risk of storms/floods	0.880	***
* p<	<0.1 ** p<0.05 ***	p<0.01



Findings: Aggregate Level

- Support for safer construction practices increased after Sept. 2019 hurricane, then declined.
- Support for government enforcement of DRR policies (building codes / construction regs.) was high after Sept. 2019 hurricane, then declined.
- Pandemic coincided with renewed increase in support for DRR policies and practices—not only for public health programs but for building codes / construction regs. too.



Findings: Individual Level

- For each type of disaster (storms/floods, pandemics), perceptions of risk from that disaster—and beliefs about the potential effectiveness of DRR policies for reducing harm from that disaster—both shaped support for the DRR policies relevant to that disaster type
- How badly one was/is affected by a disaster did not shape support for the relevant DRR policies



Findings: Individual Level

- Perceived future risk from one kind of disaster (storms/floods) enhanced perceived future risk from another (pandemic), and vice versa
- Experiencing harm from Hurricane Dorian in 2019 did not shape perceptions of storm/flood risk or pandemic risk in 2020 data
- Experiencing harm from the COVID-19 pandemic in 2020 <u>did</u> shape perceptions of storm/flood risk but <u>not</u> perceptions of pandemic risk—in 2020 data



Tentative Conclusions

- Disasters appear to raise public support for DRR practices and public policies
- Can help open "windows of opportunity" (at least in terms of public support) for improving the effectiveness of relevant policies
- Windows of opportunity are likely temporary, lasting weeks or months rather than years
- Experiencing one type of disaster may prime perceptions of risk of other types of disasters
 - Indirect causal link between the pandemic and incr. support for building codes / construction regs.?



Future Research

• Will continue to track public opinion in the Bahamas. Next surveys Oct.-Nov. 2020 and Feb.-March 2021.

(Also collected & analyzed 3 waves of survey data from Mexico City since 2017 earthquake, w/ similar findings)

- Further explore causal links between experiencing different kinds of disasters and supporting different DRR policies [using Structural Equation Models?]
- Vanderbilt/LAPOP & FIU/EEI collaborating on DRR module for the 2021 AmericasBarometer. Baseline dataset of attitudes re: risk / DRR in the LAC region will create new opportunities for disaster research.

