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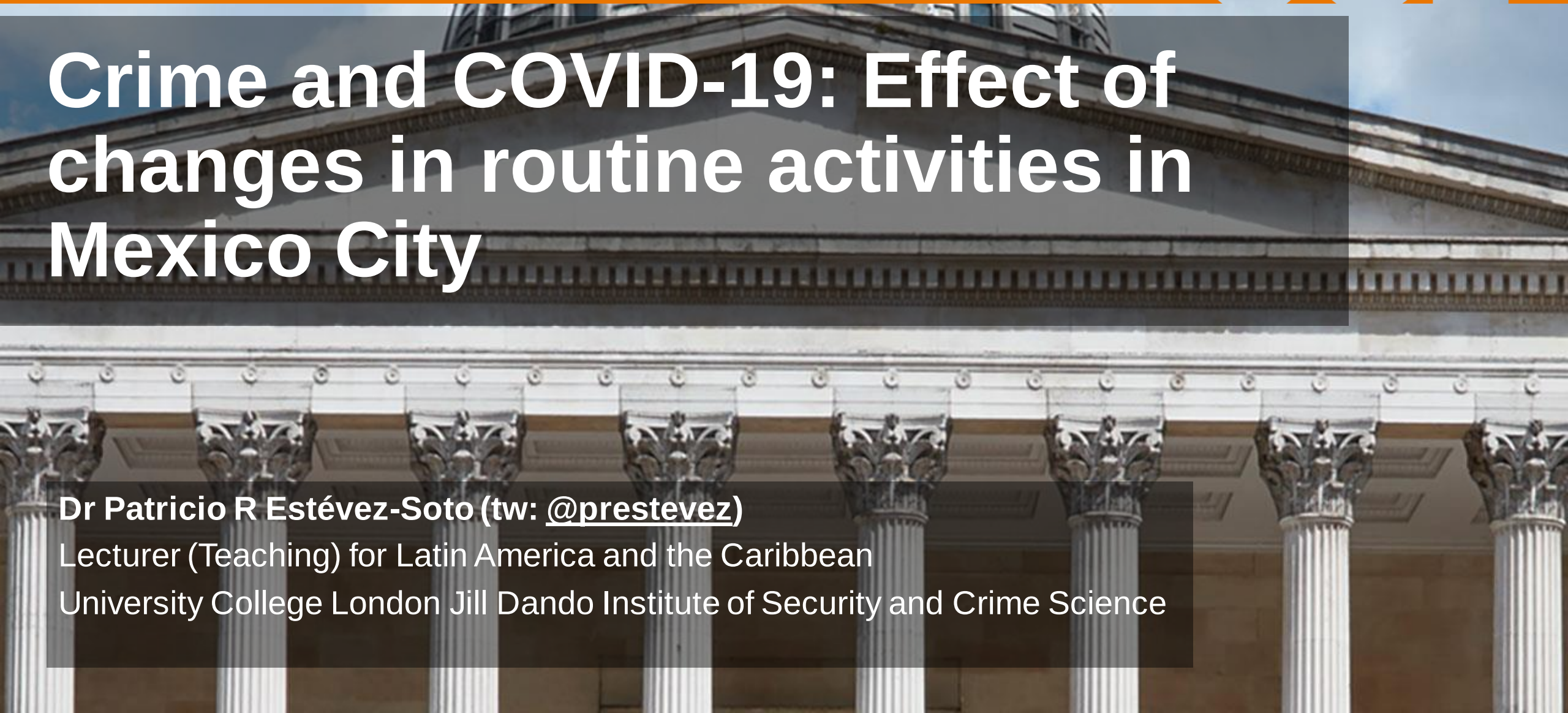
Crime and COVID-19: Effect of changes in routine activities in Mexico City



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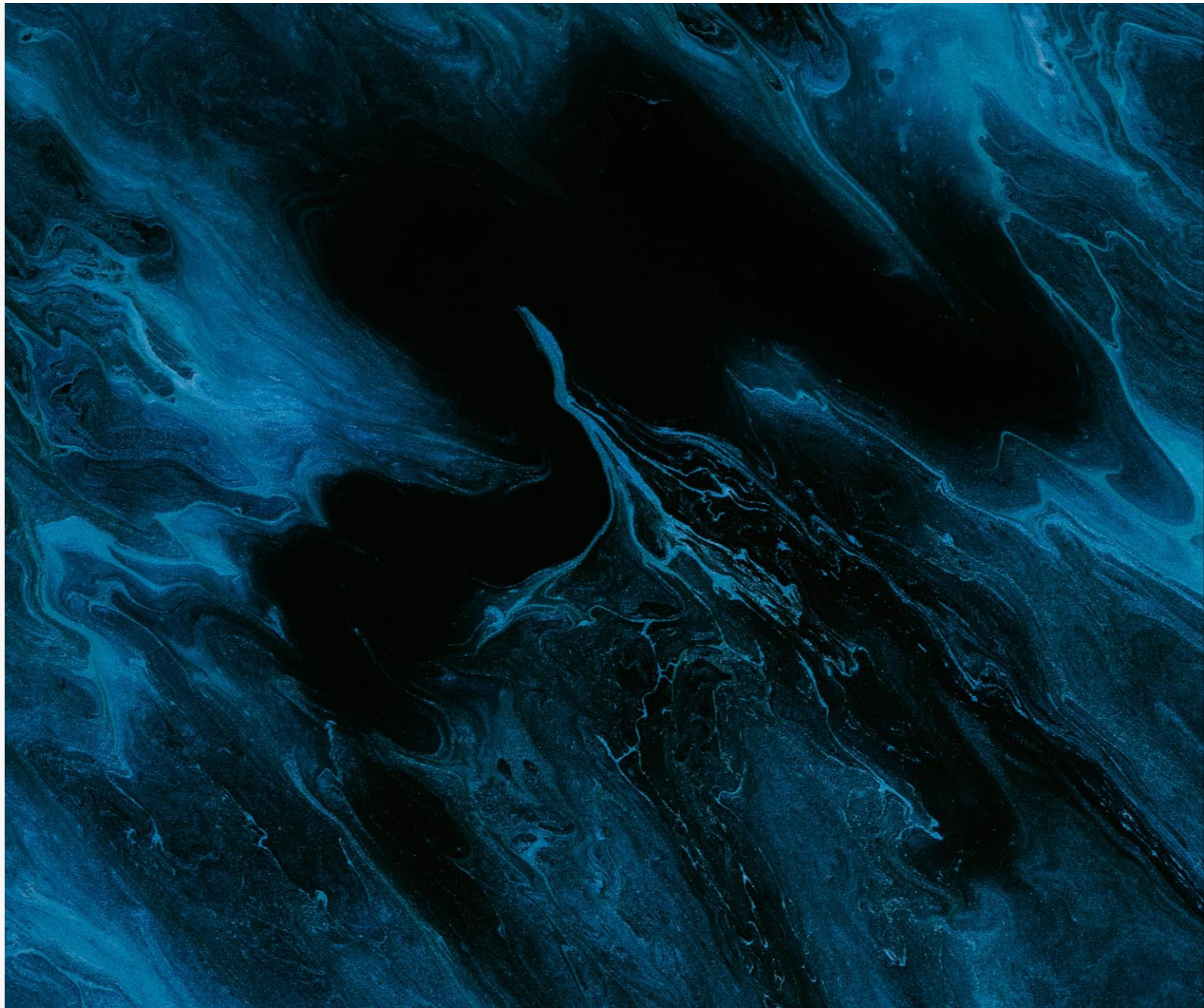
Outline

- The UCL JDI LAC Unit
- Crime and Covid-19 study
- *Background*
- *Theoretical perspective*
- *Data and methods*
- *Results*
- *Discussion*



JDI Latin America and Caribbean Unit

Aims to support improvements in the understanding of crime and the professional development of policing in the Latin America and Caribbean (LAC) region.

Projects in:

- Brazil
- Mexico
- Uruguay
- Argentina
- Jamaica
- Chile
- Belize, and more

www.ucl.ac.uk/jill-dando-institute/research/jdi-latam

Crime and COVID-19: Effect of changes in routine activities in Mexico City

DOI:10.31235/osf.io/3jfwu (pre-print)

COVID-19 and Crime Research Seminar

December 9, 2020

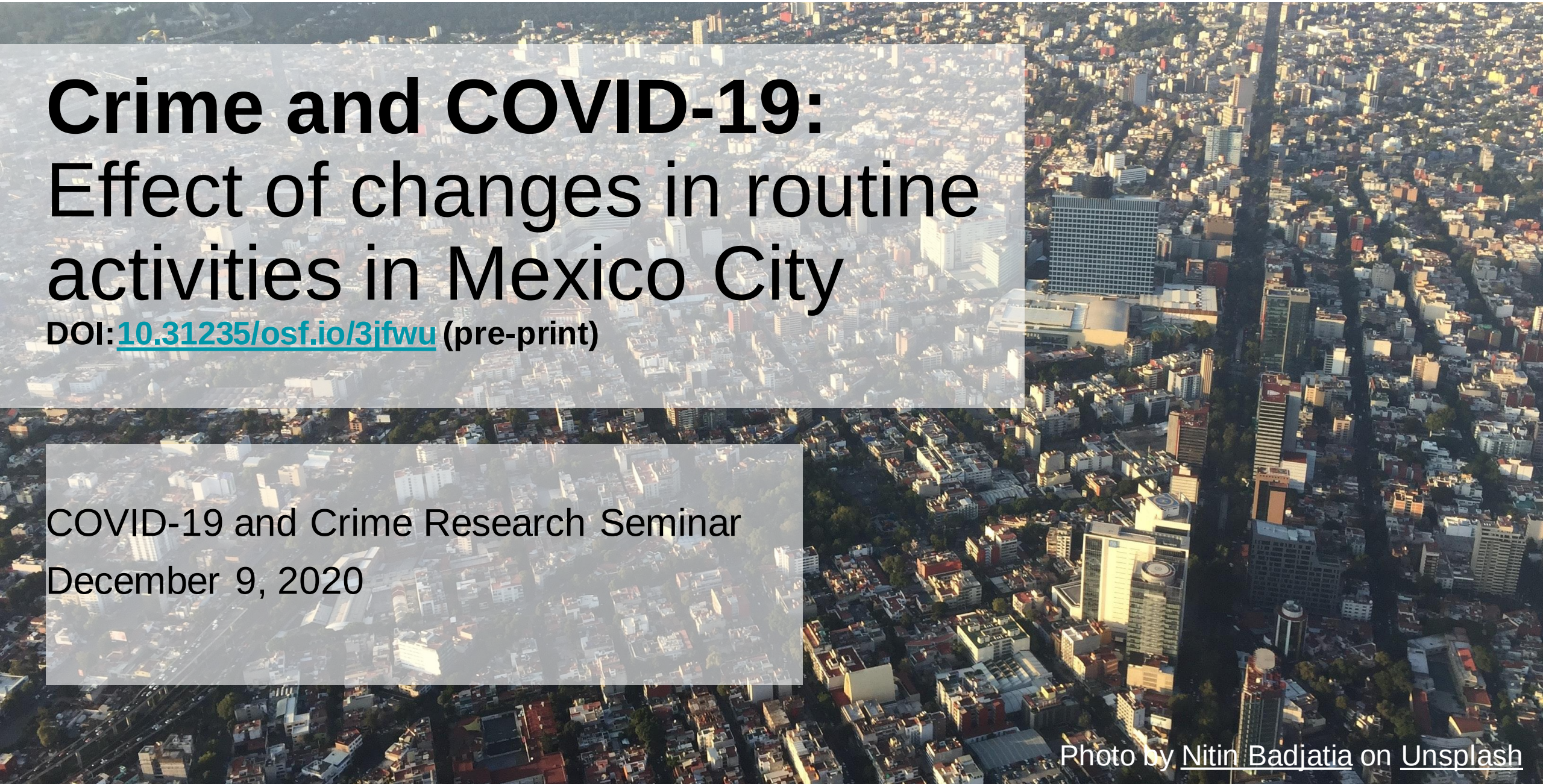


Photo by Nitin Badjatia on Unsplash

Background

COVID-19 represents the largest disruption to public life in our lifetimes.

Flurry of interest into the effects of reduced mobility and changing patterns on crime.

No research to date outside US, Australia, UK.

RESEARCH Open Access

Initial evidence on the relationship between the coronavirus pandemic and crime in the United States

Matthew P. J. Ashby*

RESEARCH Open Access

Crime and coronavirus: social distancing, lockdown, and the mobility elasticity of crime

Eric Halford[1], Anthony Dixon[2], Graham Farrell[2*], Nicolas Malleson[2] and Nick Tilley[3]

Exploring the Effect of 2019-nCoV Containment Policies on Crime: The Case of Los Angeles

Gian Maria Campedelli[†] Alberto Aziani[1,2] Serena Favarin[1,2]

[†] Corresponding Author: gianmaria.campedelli@unicatt.it
[1] Università Cattolica del Sacro Cuore, Milan (Italy)
[2] Transcrime - Joint Research Centre on Transnational Crime

Staying home saves lives, really!

Soheil Shayegh*[1] and Maurizio Malpede[†2]

[1]RFF-CMCC European Institute on Economics and the Environment (EIEE), Centro Euro-Mediterraneo sui Cambiamenti Climatici, Italy
[2]Bocconi University, Milan, Italy

American Journal of Criminal Justice
https://doi.org/10.1007/s12103-020-09546-0

Crime Rates in a Pandemic: the Largest Criminological Experiment in History

Ben Stickle[1] · Marcus Felson[2]

Journal of Criminal Justice 68 (2020) 101692

Contents lists available at ScienceDirect

Journal of Criminal Justice

journal homepage: www.elsevier.com/locate/jcrimjus

ELSEVIER

Impact of social distancing during COVID-19 pandemic on crime in Los Angeles and Indianapolis

George Mohler[a], Andrea L. Bertozzi[b], Jeremy Carter[a], Martin B. Short[c], Daniel Sledge[d], George E. Tita[e], Craig D. Uchida[f], P. Jeffrey Brantingham[b,*]

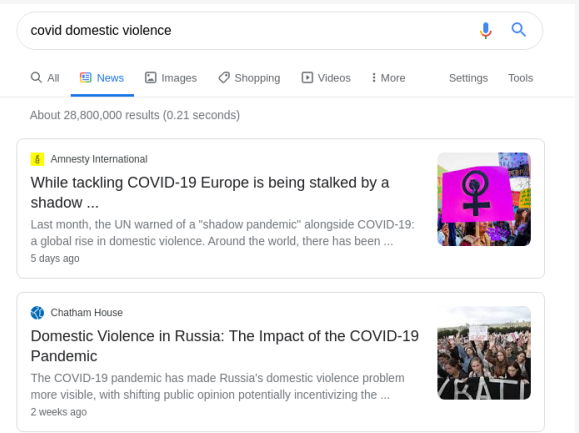
Coronavirus: Domestic violence 'increases globally during lockdown'

The UN has described the worldwide increase in domestic abuse as a "shadow pandemic" alongside Covid-19.

It's thought cases have increased by 20% during the lockdown, as many people are trapped at home with their abuser.

The BBC's Gender and Identity Correspondent, Megha Mohan, has been finding out how women in four countries have come up with solutions to help vulnerable women in their communities.

Reporter: Megha Mohan, video journalist: Olivia Le Poidevin, BBC Minute



Relevance

Practical importance

- *Has crime changed?*

Secretaría de Seguridad y Protección Ciudadana
@SSPCMexico

En el primer semestre del año alcanzamos una disminución en el delito de robo a negocios. Trabajamos día con día para conseguir estos y otros resultados. #PazYSeguridad

Translate Tweet

Theoretical importance

- *Why?*

American Journal of Criminal Justice
https://doi.org/10.1007/s12103-020-09546-0

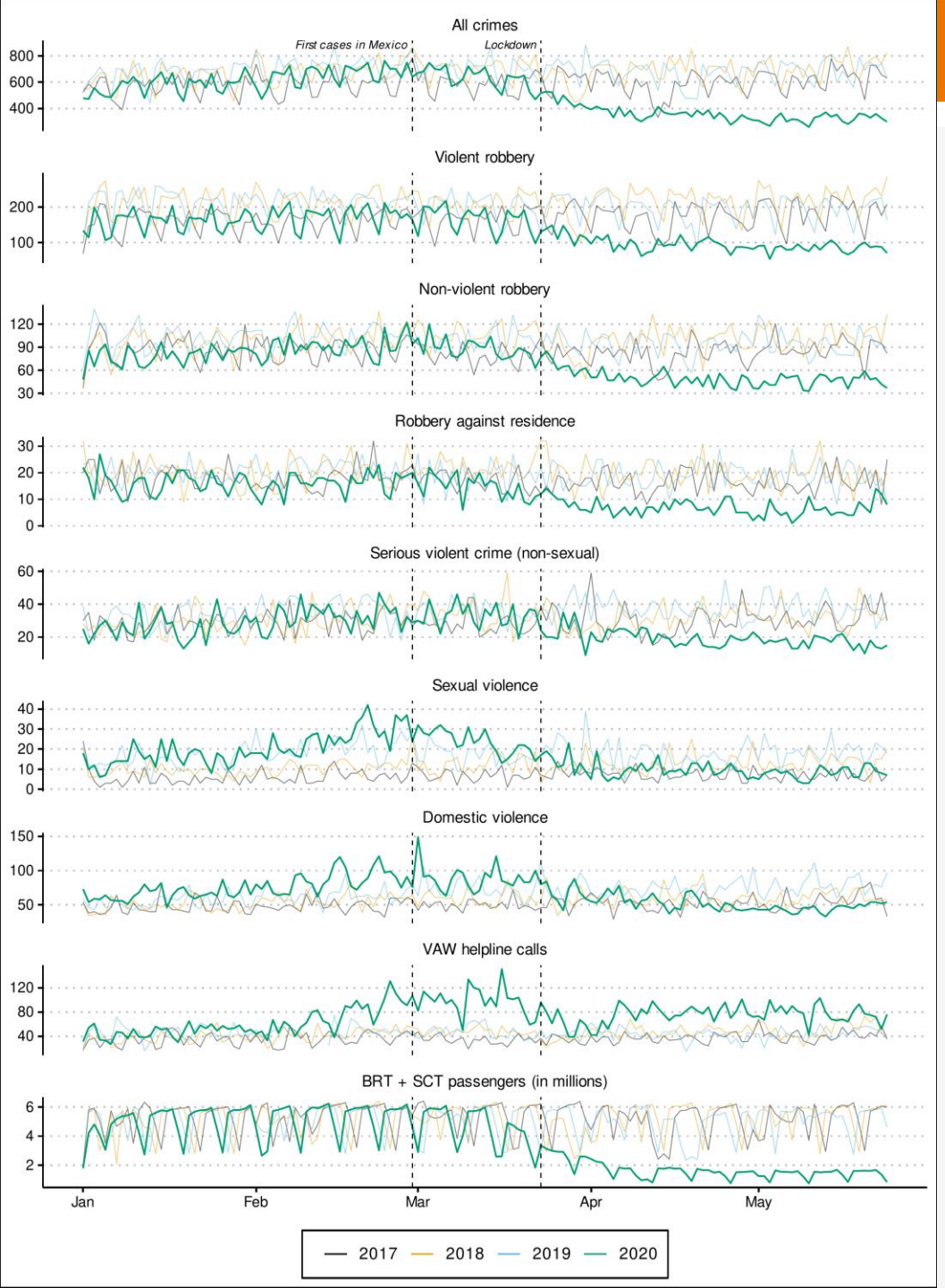
Crime Rates in a Pandemic: the Largest Criminological Experiment in History

Ben Stickle[1] · Marcus Felson[2]

Received: 29 May 2020 / Accepted: 11 June 2020/Published online: 16 June 2020

Theoretical perspective

- The Routine Activities Approach (Cohen and Felson):
- Crime events are a function of the daily rhythms and activity in a city.
- A crime occurs when a *motivated* offender encounters a *suitable* target in the absence of *capable* guardians
- Thus, the dramatic change in urban mobility due to the pandemic likely reduced/changed the rate at which offenders and targets meet.



Data and methods

Data:

- *All crimes*
- *Violent robbery*
- *Non-violent robbery*
- *Robbery against residence*
- *Serious violent crime (non-sexual)*
- *Sexual violence*
- *Domestic violence*
- *VAW helpline calls*
- *BRT + SCT Passengers*

All from datos.cdmx.gob.mx

Metods

1. ARIMA forecasts

Estimate the effect of the pandemic by comapring the observed counts to those forecast by ARIMA models using pre-pandemic data (2017-2020).

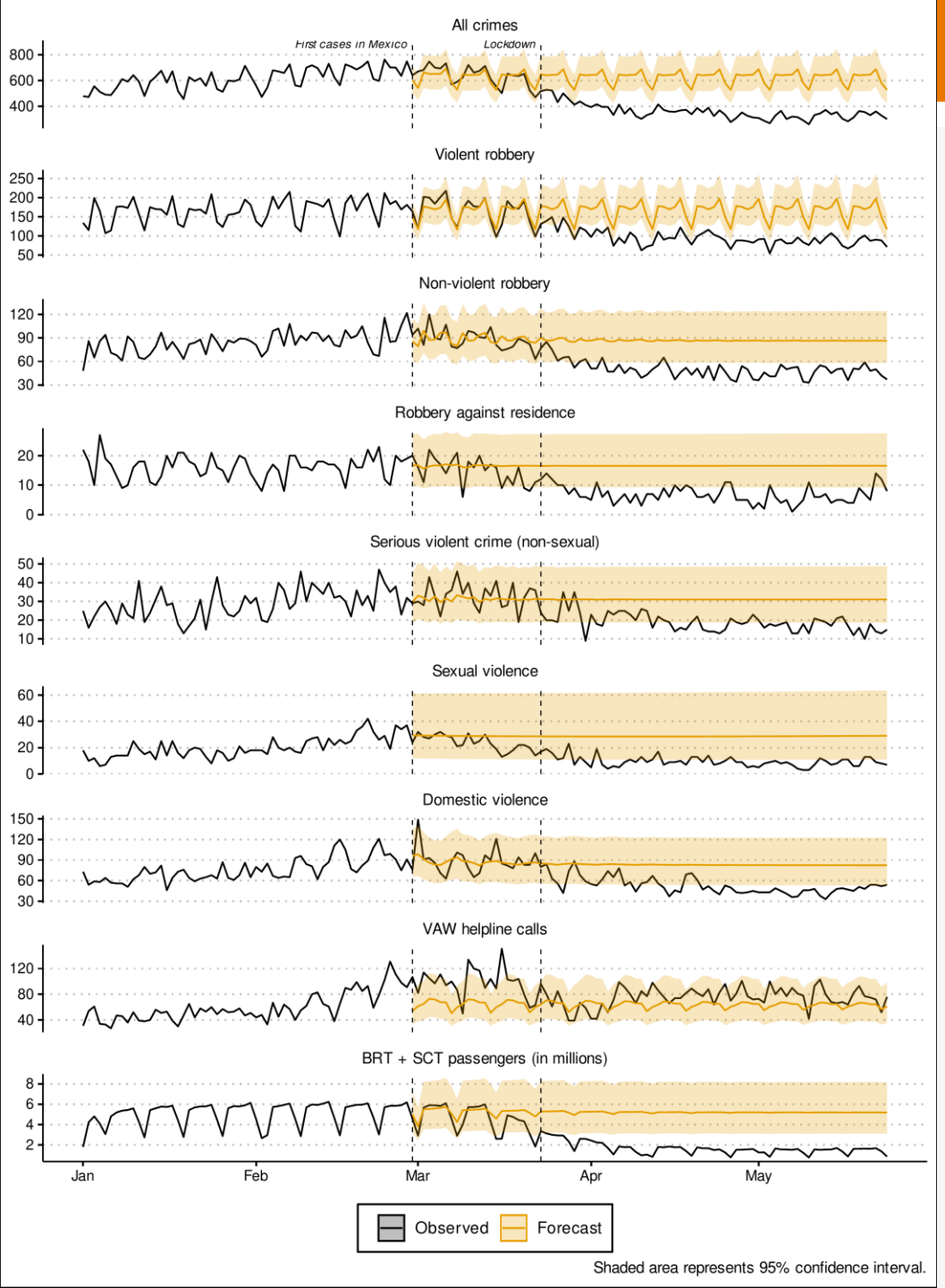
2. Linear models with ARIMA errors

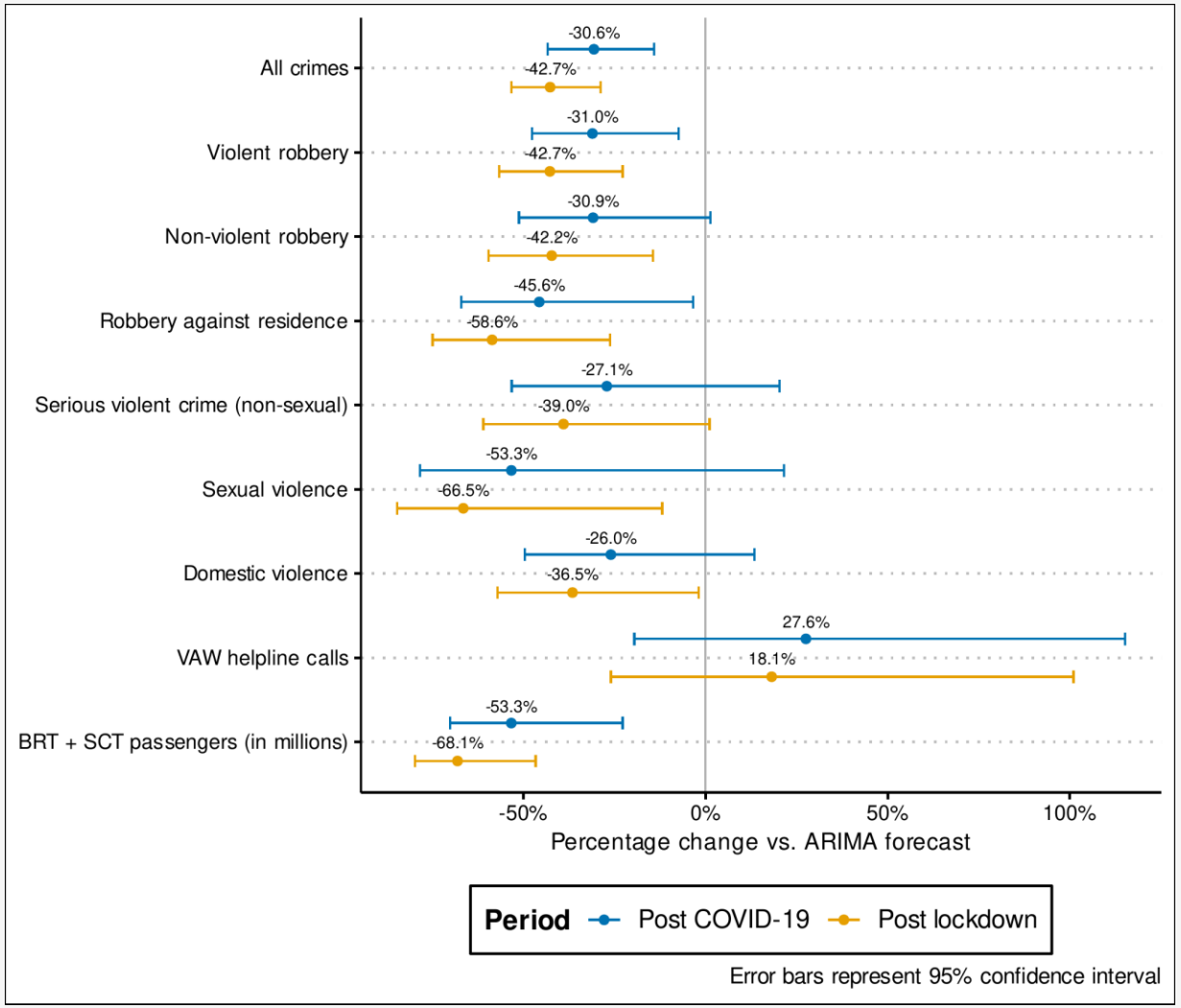
Robustly estimate the relationship between crime and urban mobility after accounting for time series properties; avoiding spurious regression problem.

$$log(y_t) = \beta log(x_t) + \frac{\theta(B)\Theta(B^7)}{\phi(B)\Phi(B^7)} z_t$$

Results

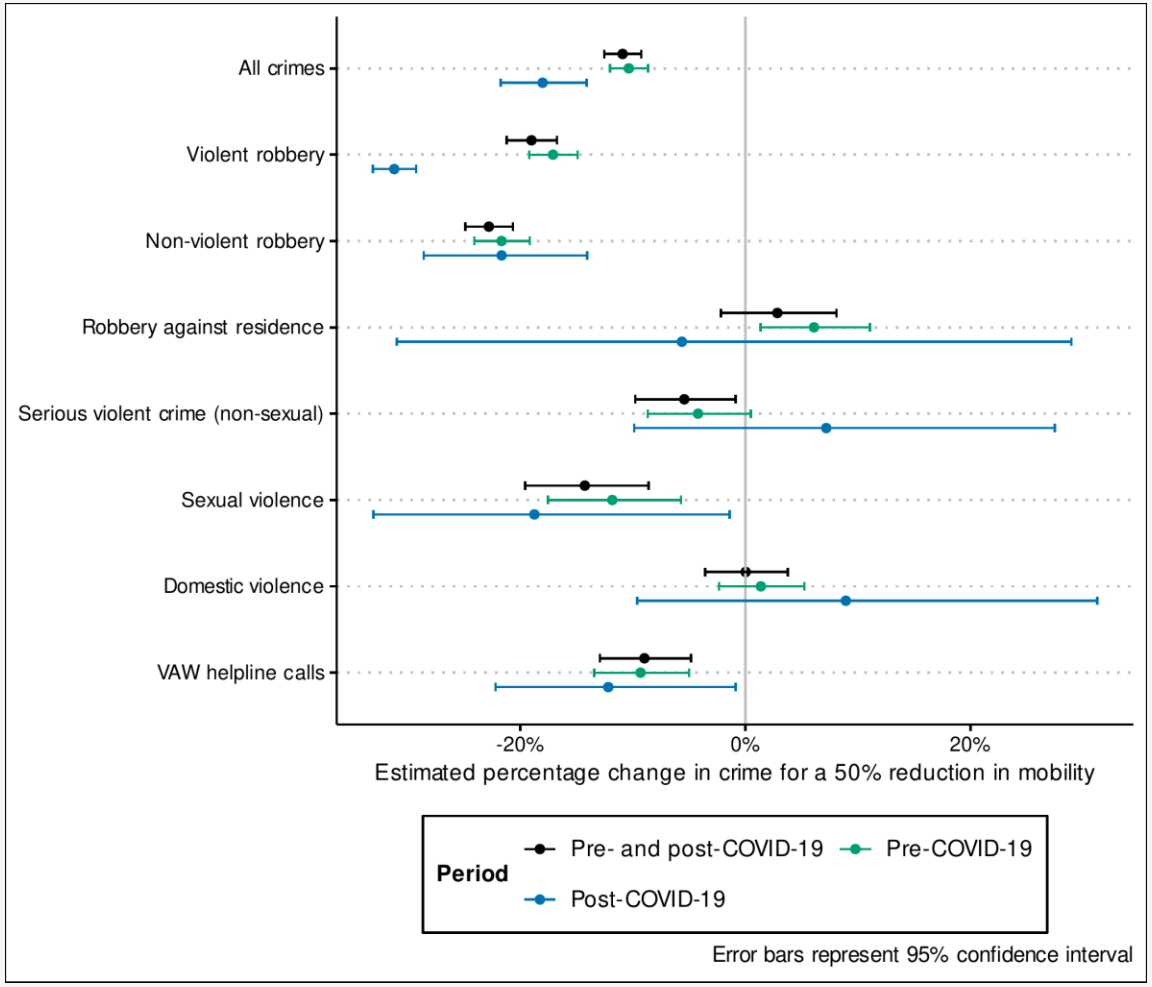
ARIMA Forecasts





LM with ARIMA errors

	Mobility coefficient (SE)
All crimes	0.167 (0.014)***
Violent robbery	0.304 (0.020)***
Non-violent robbery	0.373 (0.020)***
Robbery against residence	-0.040 (0.037)
Serious violent crime (non-sexual)	0.080 (0.035)*
Sexual violence	0.222 (0.047)***
Domestic violence	0.000 (0.027)
VAW helpline calls	0.136 (0.033)***



Discussion and conclusion

- Clear reduction in crime* due to the pandemic for most common crimes.
- Serious crime, sexual and domestic violence less clear effect.
- Crime-mobility models suggest part of the decline in some crime categories was likely due to the change in routine activities.
- For *all crimes* reduction predicted by 50% reduction in mobility was 74% smaller than that estimated by ARIMA forecast.
- Other factors not accounted for: changes to willingness and/or ability to report crimes during lockdown.
- Relationship with mobility helps clarify which reductions are more likely to be related to opportunity factors,

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