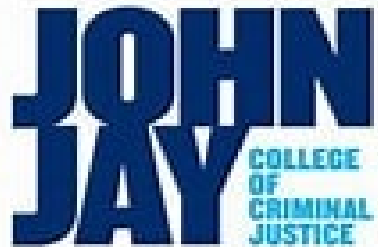


# Transnational Organized Crime Dashboard

*An Overview of Involved Processes and Utilization of ArcGIS Products*



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# Agenda

## Project Overview

- Problem Statement
- Involved Processes and Deliverables

## Conceptualizing and Operationalizing TOC

- The Role of the **Conceptualizer Team**
  - Identifying Criminal Organizations which Facilitate TOC
  - Gathering Information Sources surrounding TOC

## Gathering and Reviewing Information Sources

- The Role of a **Programming Team**
  - Development of a Web-Scraper
- The Role of **Database Reviewers**
  - Manual Verification and Extraction of Key Variables and Entities

## Utilization of ArcGIS Products

- ESRI Online Workspace
- **Development** of a Dashboard



# Project Overview

- **Problem:** While challenges posed by corruption, financial crimes, and criminal networks are *pervasive* throughout South America, there remains a lack of transnational data-driven reliable analytics to define the scope of these challenges.
- **Objective:** To enhance policy decision-making and guide foreign assistance programming decisions, we have *standardized* a method to assess the scope and scale of transnational organized crime in the Latin America and Caribbean regions.
- **Deliverable:** The outcome of this method was the development of an interactive dashboard, hosted by the *Office of International Research Partnerships (OIRP)* at *John Jay*. This product serves as a resource to monitoring TOC including that of homicide, drug trafficking, money laundering, and corruption.

Figure 1.1

**Transnational Organized Crime**

**Definition:**

The United Nations Convention on Transnational Organized Crime (UNTOC) does not contain a precise definition of "transnational organized crime".

According to the Article 2(a) of UNTOC, organized crime is:

- a group of three or more persons that was not randomly formed;
- existing for a period of time;
- acting in concert with the aim of committing at least one crime punishable by at least four years' incarceration;
- in order to obtain, directly or indirectly, a financial or other material benefit.

"Transnational" means:

- 1) offences committed in more than one State.
- 2) that take place in one State but are planned or controlled in another.
- 3) crimes in one State committed by groups that operate in more than one State
- 4) criminal activities affecting more than one country (Y. Zolyselind)

Figure 1.2

**Homicides to be considered TOC**

**Definition:**

Homicides committed by criminal organizations, in relation to criminal activities that are aimed, directly or indirectly, at obtaining illicit profits, eliminating rivals or State representatives, and imposing illegal order.

**TOC Inclusion criteria**

**a) Selection filter for homicides linked to organized crime- in general:**

- Use of assault weapons.
- Signs of mutilation or torture.
- Execution-type homicides (for example "tiro de gracia")
- Participation of a group of armed men
- Homicides carried out by hitmen ("sicario")
- Presence of signs, brands or messages linked to organized crime.
- Bodies in clandestine graves, found in abandoned vehicles or containers.

**b) Selection filter for homicides linked to transnational organized crime:**

- Homicides that occur in border areas.
- Homicides that occur in the areas of influence of national organized groups linked to TOC
- Homicides carried out by foreign organized crime groups.

**TOC Exclusion criteria**

- Homicides carried out by insurgent or terrorist organizations.
- Homicides related to the occurrence of minor crimes (such as theft)
- Reports that do not present the information on the events individually, but rather add up the victims of various actions.

Figure 1.3

**Criminal Organized groups in Latinamerica**

Some criminal organizations that 'work' at a transnational level are clearly identified, as are their main members, areas of influence, associated crimes, and more. InsigCrime provides reports by country.

# Understanding Transnational Organized Crime

- An initial definition of TOC is provided by the *United Nations Convention on Transnational Organized Crime (UNTOC)*, as presented in *figure 1.1*
  - Working with this definition, the team reviewed empirical literature and worked with scholars in the field to conceptualize and operationalize TOC.
  - In differentiating a common crime from one attributable to transnational organized crime, this required the establishment of conceptual standards to create classification criteria for different crime types (see *figure 1.2*)



# Manual Verification of Gathered Data (Part 1)

- **Objective:** In compiling and structuring information recorded by publicly available information, we aimed to ensure that all collected material met the specific criteria to be considered a TOC.
- **Processes:** To meet this goal, we conducted a manual verification (*figure 1.6*) of the collected information with the assistance of our programmers
  - This involved the extraction of entities to determine whether an event met TOC criteria
- **Deliverable:** In ensuring the quality of the gathered data for the dashboard, we also facilitated the next process in creating a final database with extracted variables and entities (*figure 1.7*) that could be visually represented and analyzed in the dashboard.

Figure 1.7

Box 6: tools for training the analyst team

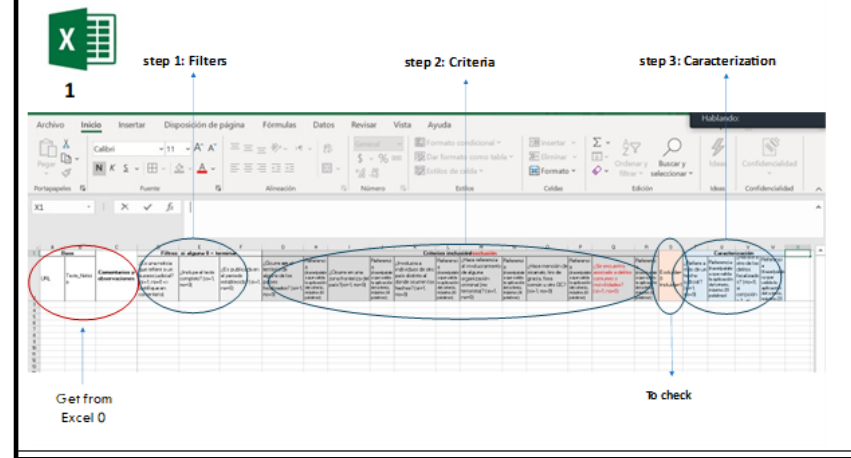


Figure 1.8

ID	Publication Dat URL	Spanish_Text	English_Text	Comments	Es una noticia	Chiclayo el inicio	Es publicado en	Ocurre en el	Referencia (Irae)	Ocurre en una Referencia (Irae)	Publica a una Referencia (Irae)	Referencia (Irae)	Referencia (Irae)	Referencia (Irae)
214	590-278-1209-2018-08-17-114	Correos tras estar desu...	Info incorrecta		1	0	0							
215	2018-08-17-114	En entrevista con el an...	Verbo score hor		1	1	1	1	Zaragoza, Arroy	0		0	0	1.64
216	41588-21	En la noche de San...	The post shared information more		0	0	0							
217	2021-02-08-0717	Thosomir de...	Alimentos quemados casados		1	1	1		Saccha, Cuzco	0		0	0	
218	2021-02-15-722	Checas a e con	Thanks to the e...		1	1	1		Pinillos, Bolivia, C	0		0	0	
219	2020-04-13-717	Enlio Jose Cord...	Enlio Jose Cord...		0	1	1							
220	40485-0	Desde este viernes...	Th No incluye fecha		1	1	0							
221	586-278	Temor en Las Ger...	Quebradas Naldas incomplet		1	0	0							
222	2021-02-07-732	Los enfrentamientos...	Naldas include, C		1	1	1		Varede La Panta	0			1	1.64
223	2019-08-07-717	En operacion con la...	No incluye dato s		0	1	1							
224		Habla participo el...	legado panti include, captu...		1	1	1		Coronamiento OI	0		0	1	1.64
225	2020-02-07-717	Trabaja de Naldas...	Naldas include, captu...		1	1	1		Taraca, Antioquia	0		0	1	1.64
226	2020-04-15-718	El municipio choc...	Chocacano en Naldas...		1	1	0							
227	2020-10-10-719	Miedo 'nudo Allen...	'was include, bandes		1	1	1		Malambo, Area h	1		1	1	1.64
228	2020-12-17-717	El Sije del Alien...	The Sign of the A...		1	1	1		Area Metropolitana	1		1	1	1.64
229	2020-04-07-717	Fuente de la P...	Police sources C include, captu...		1	1	1		San Fernando de	1		1	1	1.64
230	2020-04-15-718	Procesos de la...	and of Bar include, captu...		1	1	1		Una Esperanza, C	0		1	1	1.64
231	45881	La muerte de Mo...	The death of Mo...		0	1	1		La Lucha, Barro	1		1	1	1.64
232	2018-11-07-710	Después de más...	more there's No include, Insa...		0	1	1							
233	2020-04-15-718	En honor de la...	to be the evening No include, distic...		1	1	1		Lucha, Mesa Col	0		0	1	1.64

# Manual Verification of Data (Part II)

- Issue:** Presented with a multitude of variables and entities for each crime database, country, and year under analysis, our team was tasked with identifying key measures which could be presented in the ArcGIS dashboard.
- Solution:** To facilitate this process, a text extraction and sentiment analysis software was needed. In using this tool, the software was able to *extract* variables such as the *name of a person*, the *location of an event*, the *type of crime*, the presence of a *criminal organization*, and other variables which could be further analyzed and eventually integrated into the dashboard.
  - An example of this process is displayed in *figures 1.9* and *2.0*, where a database has undergone a complete text extraction, resulting in a new database with identified variables, extracted entities, and text classification.

Figure 1.9

Article_ID	Publication Date	Spanish title	Meta Description	Spanish_Text	English_Text	URL	RAIZ	Article_Classification
1000	2020-02-09T19:03	Robo cibernético	La Policía detalló la División de Division Scams	https://di	diario	crime, law and justice - organized crime		
1001	2019-10-25T22:21	Estudiante que	El joven tenía sig Un estudiante A college stud	https://di	diario	crime, law and justice - police		
1002	2019-02-10T20:58	George Forsyth:	Participaron un t El alcalde La V Mayor La Victo	https://di	diario	crime, law and justice - crime - drug trafficking		
1003	2018-09-07T13:45	Fiscal pide 28 añ	El plazo de su de A poco de cun Shortly met 36	https://di	diario	crime, law and justice - organized crime		
1004	2019-09-23T02:19	Difunden imáge	Actor de "La rosa Cada paso que Every step he t	https://di	diario	crime, law and justice - police		
1005	2019-09-02T02:10	7 imágenes inéd	Mario Peláez Bur Mario Peláez i Mario Pelaez B	https://di	diario	crime, law and justice - organized crime		
1006	2018-10-27T20:18	Incautan 1,200 k	Miembros de la l Los miembros Members of th	https://di	diario	crime, law and justice - crime - drug trafficking		
1007	2018-11-01T17:13	?Incautan más d	Buque provenier Más de 130 kil More than 130	https://di	diario	crime, law and justice - crime - drug trafficking		
1008	2019-08-17T20:36	Incautan cerca d	La Policía, además Los miembros Members of th	https://di	diario	crime, law and justice - crime - drug trafficking		
1009	2018-06-12T03:00	Incautan más de	La organización c Más de 5000 p More than 5,0c	https://di	diario	crime, law and justice - crime - drug trafficking		
1010	2020-02-26T02:46	Venezolana hall	Joselyn Daniela \ Joselyn Danie Joselyn Daniel	https://di	diario	crime, law and justice - police		
1011	2020-05-19T02:45	KFC fue clausurá	Establecimiento La Municipaliç The Municipaliç	https://di	diario	politics - regional authority		
1012	2020-11-18T02:41	Comunidad skat	Sus patinetas fue Los skaters, d Skaters, athlet	https://di	diario	crime, law and justice - police		
1013	2018-03-05T19:08	Los Gatos Salvaj	Mataban a su cor La peligrosa b Dangerous bar	https://di	diario	crime, law and justice - organized crime		
1014	2020-01-01T00:23	Los Olivos: Capt	Los facinerosos u Agentes de la Depincri agent	https://di	diario	crime, law and justice - organized crime		
1015	2020-12-09T13:01	Mafia de serbio	Subterráneo con La mafia del s Mafia Serbian	https://di	diario	crime, law and justice - organized crime		
1016	2020-11-12T00:58	Protestas contin	Agentes policiaç Las protestas i Protests again:	https://di	diario	crime, law and justice - police		
1017	2018-05-16T15:37	Marihuana trans	Su proceso de sí Expertos de D DEVIDA expert	https://di	diario	crime, law and justice - crime - drug trafficking		
1018	2019-09-22T14:54	Iracunda mujer	Claudia Haro insi Un nuevo casç A new case of i:	https://di	diario	crime, law and justice - police		
1019	2020-11-05T04:17	Mujer fue asesii	El crimen habría : Una mujer fue A woman was :	https://di	diario	crime, law and justice - police - investigation		
1020	2020-12-05T01:41	Pareja cae con n	Según la Policía, Con 66 estam; 66 stamps you	https://di	diario	crime, law and justice - police		
1021	2019-09-28T21:59	Peruano habría	'Tarra', acusado d El venezolano Venezuelan Ar	https://di	diario	crime, law and justice - police		
1022	2018-12-28T20:44	Peruanos fueroi	Familiares prote: Familiares de Relatives of Ed	https://di	diario	crime, law and justice - judiciary (system of justice)		
1023	2019-11-18T16:03	Destituyen a jefe	Alto mando de la El jefe de la D The head of th	https://di	diario	crime, law and justice - police - investigation		
1024	2018-09-21T13:17	Policía feminini	Delincentes est No tuvo mied l was not afraic	https://di	diario	crime, law and justice - police		
1025	2020-12-01T01:47	General PNP Ós	El oficial señala e Tras la solicitu Following the i	https://di	diario	crime, law and justice - police		
1026	2018-12-01T15:21	Policías se infilti	Capturas de los c infiltrándose i infiltrating the	https://di	diario	crime, law and justice - police		
1027	2020-12-14T18:04	Disfrazados de F	Se les acabó la N Agentes del G Terna agents o	https://di	diario	crime, law and justice - organized crime		
1028	2020-12-07T18:46	Policía tiene la f	No obstante, Cor Comandante i General Police	https://di	diario	crime, law and justice - police - investigation		

Figure 2.0

C	D
Topic Category	Type
Entity	Top>Organization>Company
Entity	Top>Location>GeoPoliticalEntity>Country
Entity	Top>Person>FullName
Entity	Top
Entity	Top>Person>FullName
Entity	Top>Organization>InternationalOrganization
Entity	Top>Person>FullName
Entity	Top>Location>GeoPoliticalEntity>Country
Entity	Top>Person>FullName
Entity	Top>Location>GeoPoliticalEntity>Country
Entity	Top>Person>FullName
Entity	Top>Person>LastName
Entity	Top>Location>Facility>StationTop>Port
Entity	Top>Organization>InternationalOrganization
Entity	Top>Organization
Entity	Top>Person>LastName
Entity	Top>Person>FullName
Entity	Top>Person>LastName
Entity	Top>Person
Entity	Top>Person>FullName
Entity	Top
Entity	Top>Person>FullName
Entity	Top>Organization>Government
Entity	Top>Person>FullName
Entity	Top>Person>FullName
Entity	Top>Location>GeoPoliticalEntity>Country



# Dashboard Development Processes

---

```
mirror_mod = modifier_ob.  
set mirror object to mirror.  
mirror_mod.mirror_object =
```

```
operation == "MIRROR_X":  
mirror_mod.use_x = True  
mirror_mod.use_y = False  
mirror_mod.use_z = False  
operation == "MIRROR_Y":  
mirror_mod.use_x = False  
mirror_mod.use_y = True  
mirror_mod.use_z = False  
operation == "MIRROR_Z":  
mirror_mod.use_x = False  
mirror_mod.use_y = False  
mirror_mod.use_z = True
```

```
selection at the end -add  
mirror_ob.select= 1  
modifier_ob.select=1  
context.scene.objects.active  
("Selected" + str(modifier_ob.  
mirror_ob.select = 0  
bpy.context.selected_object  
data.objects[one.name].select  
print("please select exactly
```

-- OPERATOR CLASSES ----

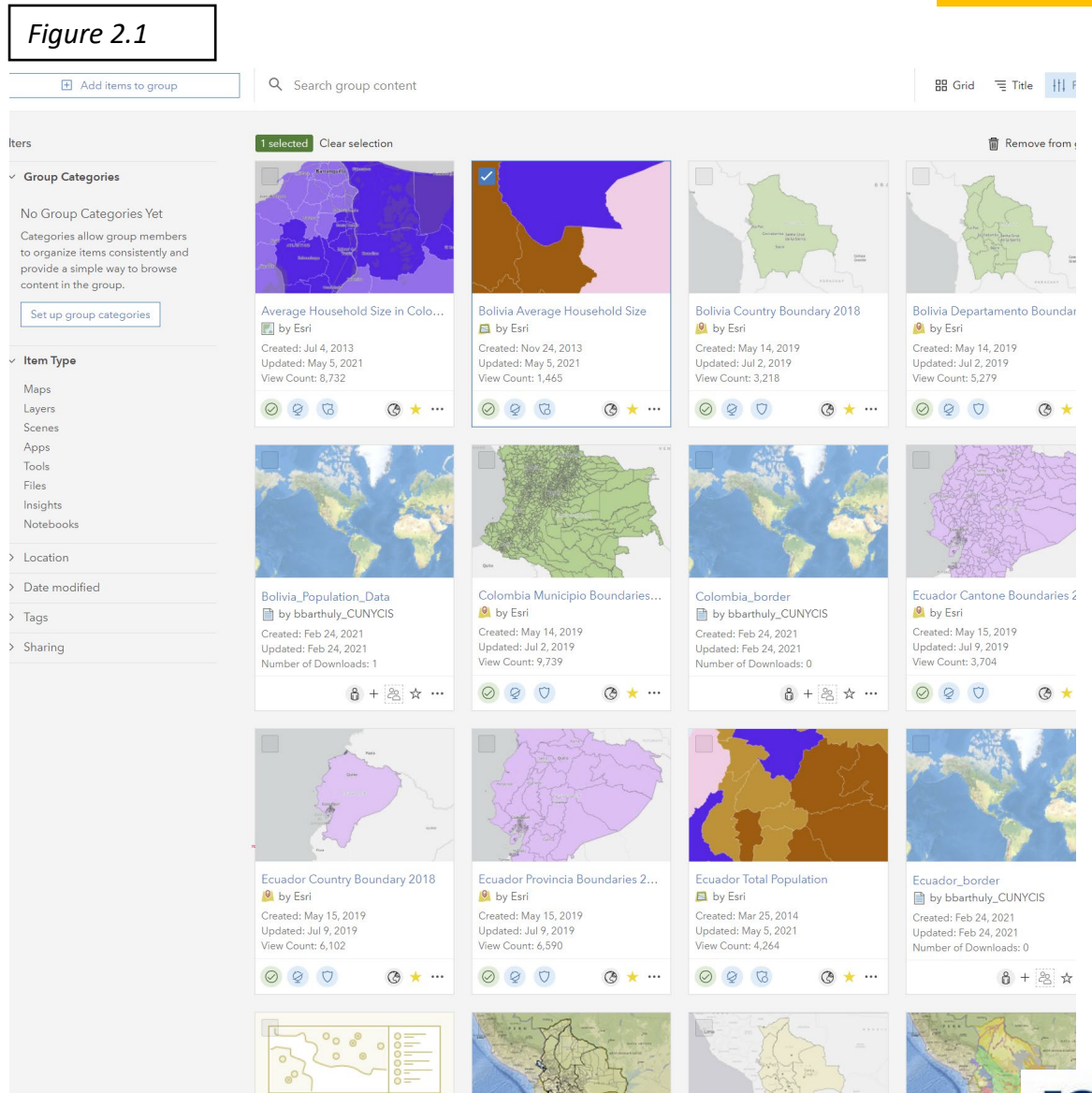
```
types.Operator):  
X mirror to the selected  
object.mirror_mirror_x"  
mirror X"
```

```
context):  
context.active_object is not
```



# The Development of a Dashboard (*Part I*)

- Once the database had been created, the next step was to extract and upload the file into the ESRI Online platform.
  - In having a working project space (*see figure 2.1*), that contained all content, including spatial files, databases, and provided access to the dashboard, this has facilitated the creation and continued modification of a dashboard with newly reviewed data.



# The Development of a Dashboard (Part II)

- **After gathering, reviewing, extraction** and creating a final database consisting of TOC events specific to the crime, geography, and timeframe under analysis, the next step was to present this information in the form of an analytics dashboard.
- **In using** ArcGIS Pro software, we integrated the database into the program and geocoded locations for each incident.
  - We are also able to incorporate the circumstances surrounding each incident into the dashboard (*figure 2.2*)
- **Finally**, we created filters in the dashboard to allow the user to interact with the geography, timeframe, and other variables.
  - A hyperlink was also incorporate that allowed the user to be directed to the information source (*figure 2.3*).

Figure 2.2

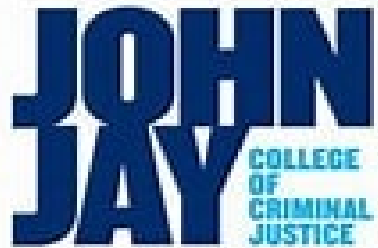


Figure 2.3



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