A World of Numbers

FIGURES ON GLOBAL CRIME AND VIOLENCE
Environmental Crimes

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Financial Crimes
How much money is laundered annually? How can we measure financial crimes?

Impressum:
Idea: Prof. Dr. Anja P. Jakobi
Realization: Lena Herbst, BA
Jascha Vonau
Technische Universität Braunschweig
Chair of International Relations
Bienroder Weg 97
38106 Braunschweig, Germany
GO
FIGURE...
Evidence-based policy making, computational social science, predictive policing or the quantitative study of civil war – all these fields need data to formulate conclusions and sometimes even predictions. Data seems to provide overview and orientation. It enables us to separate good choices from bad ones by providing information about the consequences. Scientific, political and economic judgements are often based on analyzing data with the aim to achieve the best, rational decision. Trust in this process can be undermined by scandals or ‘wrong figures’ provided, or by manipulated data that suggests specific conclusions over others. Such scandals are well-documented, but they are not the topic of this issue.

Instead, we aim to stimulate thought on another problem linked to data – persistent problems of quality and how to overcome them. This problem of quality can – but does not have to – result in wrong decisions and conclusions. At the very least, our research group thinks that conclusions based on data need a clear understanding of the gaps in the data, and how data suggests a quality that is not given.

Some work in International Relations, criminology and economics have regularly pointed at the large gaps related to data – and what it means for discussing related political questions [8] [9] [10].

This issue adds to that literature by delivering a more playful discussion of how data can lead and mislead your impression.

None of the data provided here is ‘bad data’ in the sense that it is simply wrong – still the numbers do not add up. But instead of simply dismissing the data as fully inadequate, the collection urges you to think about the qualities when looking at the quantities.

Enjoy the issue – at least, I hope, it delivers some proof that data questions are not only relevant, but also extremely exciting!

Anja P. Jakobi
Professor of International Relations
TU Braunschweig
Although financial crime encompasses different types of crimes, money laundering is one of the main sources for illicit profits in the shadows of the financial sector. While estimations range between $1000 Billion and $2000 Billion being laundered annually, the numbers are neither accurate nor up to date. In 1998, Michel Camdessus, Managing Director of the IMF, stated that money laundering might amount to about 2–5 percent of the global GDP without referring to an actual study. Although 20 years have passed, the “number lives on, because people do want to have some number and nothing else seemingly as authoritative has appeared since” [18] [19] [20] [21].

As the worldwide GDP is estimated to be about $80 Trillion for 2017, proceeds from financial crimes would amount to between $1.6 Trillion and $4 Trillion according to the 2-5% percent estimation [22] [23]. However, there is no reliable data on the actual cost of financial crime worldwide – not solely based on exemplary studies. While van Duyne et al. (2018) estimate $2.6 Trillion, a study released by Thomson Reuters only assumes a sum of $1.45 Trillion [7] [14].
Although financial crime encompasses different types of crimes, money laundering is one of the main sources for illicit profits in the shadows of the financial sector. While estimations range between $1000 Billion and $2000 Billion being laundered annually, the numbers are neither accurate nor up to date. In 1998, Michel Camdessus, Managing Director of the IMF, stated that money laundering might amount to about 2–5 percent of the global GDP without referring to an actual study. Although 20 years have passed, the “number lives on, because people do want to have some number and nothing else seemingly as authoritative has appeared since” [18] [19] [20] [21].

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How to measure the immeasurable?

Independent from the general problem of diverging numbers and lacking official data, it is difficult to measure and rate certain crimes such as corruption. As it is not highly objective to determine where corruption begins and where it ends, corruption is rated along a perception index, ranging from 0 (highly corrupt) to 100 (highly clean) [25] [26].

“47% of questioned organisations have been victims of financial crime over the last 12 months”

Financial crimes, in particular the crime of money laundering, are connected to the illicit proceeds of drug trafficking, forms of modern slavery and human trafficking, and most recently cybercrime [27].

Not only the economic loss for worldwide economies, especially in developing countries, but also the potential use of the stolen money for illegal and dangerous activities, such as terrorist financing, makes fighting financial crimes a necessity of modern times [31].
In recent years, the number of criminal offences in cyber space has increased steadily. Due to its scale, easy accessibility, anonymity, global reach without borders and absence of capable guardians, the Internet could become a pool for hackings, spams, trojans and viruses, targeting businesses as well as individuals. The numbers and facts about cyber (-related) crimes are not only astonishing and unsettling, but also missing, invalid and diverging [32] [33] [34]. High uncertainties and lacking sources for reliable data in this field of study, many questions remain open, including what cybercrime actually is.

What is cybercrime?

In the last years, the term cybercrime has evolved and does not only include computer crimes, but also virtual and electronic crimes. Since there is no common definition on cybercrime, the term has various understandings, making a comparison between different data difficult [32].

For the US Department of Justice cybercrime involves all crimes, in which computers are the target, the tool or an incidental aspect [35].

It is expected that Cybercrime will cost the world $6 trillion annually by 2021 [40]!
The big picture

Every two seconds there is a new victim of identity fraud, leading up to 13 million people in 2013 with a financial impact of $18 billion [37].

There are 130 security breaches per company per year and they are expected to increase by 27.4% [38].

The average annualized cost of cybersecurity is $11.7 million, which is expected to increase by 22.7% per year [38].

It takes 50 days to resolve a malicious insider attack on average [38].

It takes 23 days to resolve a ransomware attack on average [38].

There is a hacker attack every 39 seconds [39].

It is expected that cybercrime will cost the world $6 trillion annually by 2021 [40].

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2017

16.7 million victims of identity fraud, leading to a stolen sum of $16.8 billion [42].

Most victims were in the age group over 60 years (49,523 victims with a total loss of $342,531,972) [39].

$1.5 trillion dollars are lost annually due to cybercrime with $860 billion (Illicit/illegal online markets), $500 billion (theft of trade secrets/IP), $160 billion (data trading), $1.6 billion (crimeware-as-a-service), $1 billion (ransomware) [43].

780,000 records were lost per day in 2017 [41].

The highest number of compromised data records in selected data breaches have been Yahoo (3,000 million), Facebook (2,200 million) and River City Media (1,370 million) [44].

160,000 incidents in 2017, while in 2016 only about 82,000 incidents due to the unprecedented rise of ransomware, which accounted for 134,000 attacks [45].

“Proving that maxim that crime follows opportunity virtually every advance has been accompanied by a corresponding niche to be exploited for criminal purposes” (Clough 2010)

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2017

108,510 computer crimes were registered in 2017, resulting in a slight change of 0.7% to 2016 [47].

86,372 incidents of computer fraud in 2017 [47].

85,960 delicts [48].

16.804 incidents were registered at authorities [49].
Cyber Crime is now becoming more profitable than the global trade of illegal drugs”[41]

But does anyone actually know the profits of the drug trade?
Costs of cybercrime

- $445 billion a year, with a range of between $375 billion and $575 billion (McAfee/CSIS) [42]
- $500 billion a year as potential cost of cybercrime (Microsoft) [41]
- Average cost of a data breach is growing; While in 2017 it costed $3.62 million, in 2018 it costed $3.86 million (IBM) [38]
- In Germany, cost of 1.6% of GDP (44 billion Euros) [50]

Who suffers the most?

- US had strongest financial consequences ($21.22 million, followed by Germany with $11.15 million) [38]
- China had most consumer loss with $66.3 billion, followed by Brazil ($22.5 billion) and the US ($19.4 billion) [51]
What is terrorism?

Terrorism is the “premeditated use or threat to use violence by individuals or subnational groups in order to obtain a political or social objective through the intimidation of a large audience beyond that of the immediate victims”. Multiple sociological, psychological and criminological approaches aim at explaining causes of terrorism and terrorist objectives. Depending on the motives of the respective terrorist group, the literature differs between five types of terrorism: state terrorism, dissident terrorism, religious terrorism, criminal terrorism, and international terrorism [54] [55] [56].

WHAT’S THE TREND WITH TERRORISM?

<table>
<thead>
<tr>
<th>Number of terrorist attacks in 2017</th>
</tr>
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<tbody>
<tr>
<td>Statista</td>
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<tr>
<td>Our World in Data</td>
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<td>START</td>
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Is the world getting safer?
Although numbers of terrorist attacks and related deaths differ significantly for 2017, the overall trend suggests a decline in attacks and related deaths since 2014 [61] [62].

How much money do terrorist groups need?
While it is commonly accepted that the actual terrorist attacks are relatively cheap, the organisational costs of a terrorist group amount up to 90% of the finances [65].

What is the economic impact of terrorism?
While the number of the Global Terrorism Index 2017 has found wide application, it is not that clear what the economic impact entails. It is estimated that the economic impact is $84 billion in 2016 with Iraq, Afghanistan and South Sudan suffering the most [51].

However, a survey, released by RAND Europe and the European Parliament from 2017, suggests that terrorism has costed Europe 180 billion € from 2004 to 2016 [66].

$2,800,000,000,000

In the fight against terrorism, the United States have spent this amount in the years from 2001 to 2018. [67] [68] [69]. For the whole `War on Terror` numbers go up to $5.9 trillion [70].
Environmental crimes are on the rise, so are efforts to prevent them"[71]
- But is it enough?!

While some say that profits from environmental crimes can be as lucrative as drug trade, others rank it only as the fourth biggest crime[72][73]. However, without doubt, environmental crimes not only threaten economies, but also the whole ecosystem.

Although estimations on proceeds of all environmental crimes are quite similar due to a report from Interpol and UN Environment, the numbers vary significantly across the different areas of environmental crime[73]. It is estimated that the overall, annual value of transnational environmental crime is worth $91-259 Billion, indicating an increase by 26 percent in comparison to 2014. Future prognoses estimate an annual increase by 5 to 7 percent[73].
Illicit trafficking in endangered animal species and wildlife trade

This type of environmental crime is persistent in Africa, Asia and Latin America, where all kinds of species are affected and threatened. Although studies suggest different estimations on the number of generated profits or amounts of traded materials, the overall trend shows an increasing illegal financial source [71] [76].

Quick facts:

- Between 20,000 and 25,000 elephants are killed annually by poachers [77]
- Only 3,890 wild tigers remain [78]
- Rhino poaching increased from 13 to 1,004 between 2007 and 2013 [78]
- at least 1,338 Rhinos were killed across Africa in 2015 by poachers [79]
- Profits are expected to be in the Billions of USD [78]
Studying child soldiers is part of diverse disciplines, including anthropology, law, political science, economics, psychology and sociology, among others. Civil society is crucial to generate knowledge about the phenomenon, but academic research expanded in recent years as well. Nevertheless, most research focuses on case studies and small comparative analyses, not on large statistics [80]. Due to the divergent definitions, statistics on the use of child soldiers consequently differ as well. According to the Child Soldiers Index published by Child Soldiers International, “at least 46 States (sic!) still recruit children under the age of 18 into their armed forces”. Including Germany, France, Canada, the United Kingdom and the United States. The map illustrates the minimum age of recruitment worldwide [85]. According to the UNICEF definition, these states would use child soldiers [82].

What is a child soldier?
The United Nations Children’s Fund (UNICEF) defines a child soldier as “any child – boy or girl- under 18 years of age, who is part of any kind of regular or irregular armed force or armed group in any capacity, including, but not limited to cooks, porters, messengers, and anyone accompanying such groups other than family members” [82]. Despite that, several international treaties consider the topic of children in armed conflicts. For instance, the “Optional Protocol to the Convention on the Rights of the Child on the involvement of children in armed conflict” by the UN prohibits the recruitment of persons under the age of 18 for violent actions, but allows state forces to recruit from age 16 [83]. Furthermore, the ‘International Labour Organization Convention No. 182 on the Prohibition and Immediate Action for the Elimination of the Worst Forms of Child Labour prohibits, inter alia, forced or compulsory recruitment of children for use in armed conflicts’. The use of children under the age of 15 in international and non-international conflicts is a war crime according to the International Criminal Court [84] Hence, some definitions include the use in conflict situations as a crucial condition while others not.
INSECURE NUMBERS

Watch Out: Double Standard

- as long as these forces do not use the children in armed conflicts, recruitment is legal according to the Optional Protocol to the Convention on the Rights of the Child on the Involvement of Children in Armed Conflict this [83]
- 18 states would violate the treaty, namely Afghanistan, the Central African Republic, Colombia, the Democratic Republic of the Congo, India, Iraq, Myanmar, Pakistan, Philippines, Somalia, South Sudan, Sudan, Syria, and Yemen [86]

The Biggest Myth: 300,000 Child Soldiers Still Today

Child protection actors in the late 1990s estimated that 300,000 children are used as soldiers in armed conflicts worldwide. This estimation has been broadly referenced as an absolute number by the media and other civil society actors [83]. More than 20 years later, it is still publicised regularly - even in academic publications [82][83]. However, according to the 2008 Child Soldiers Global Report, this figure cannot be taken as definitive as “the proper data on child soldiers are unknown for a number of reasons, such as lack of proper birth records or falsification of them in certain countries, and inadequate mechanism to verify the age of new recruits. As such, no one can precisely determine the exact number of child soldiers” [87].

However, these numbers from the UN only reflect reported cases. They do not reflect those children who are part of armed forces in non-conflict situations. It is impossible to determine definitive numbers in this field of study because most actors conceal the participation of children in their ranks [87]. Hence, the concrete extent of child soldiers remains opaque.

As in other crime fields, scholars face serious challenges on how to deal with insufficient data and how to generate reliable data to conduct research.
Imagine having all of your freedoms taken away, being forced to work against your will, and constantly living under the threat of violence - in short, being forced to live as a slave. Sadly, this situation is a reality for millions of children, women, and men each year as part of the global human trafficking industry.” [88]

- Bill Flores

What is human trafficking?
According to the Protocol to Prevent, Suppress and Punish Trafficking in Persons, especially Women and Children of the United Nations Convention against Transnational Organized Crime, “‘Trafficking in persons’ shall mean the recruitment, transportation, transfer, harbouring or receipt of persons, by means of the threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power or of a position of vulnerability or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation. Exploitation shall include, at a minimum, the exploitation of the prostitution of others or other forms of sexual exploitation, forced labour or services, slavery or practices similar to slavery, servitude or the removal of organs” [89] [90].

The main problem
Human trafficking is a complex and dynamic crime, which takes place in diverse contexts. It is difficult to detect and scarcely reported. A crucial challenge for developing and monitoring counter-trafficking measures is the significant lack of reliable and high-quality data regarding “the scale of human trafficking and the profile of victims” [91]. Databases just include reported cases. No global or regional estimates regarding the distribution of human trafficking exist. National estimates have been conducted in a few countries, but they are also based on modelling of existing administrative data from identified cases and should therefore only be considered as basic baseline estimates. Historically, producing estimates of the prevalence of trafficking based on the collection of new primary data through surveys, for example, has been difficult. This is due to trafficking’s complicated legal definition and the challenges of addressing difficult, sensitive questions to respondents in household surveys in an ethical manner. [92]. Databases just include reported cases. Estimations based on aggregated data have to be treated with caution. Moreover, the abstract definition of human trafficking makes the collection of data more difficult [92].

Quick facts:
• Most common form of human trafficking is sex trafficking [93]
• More women than men are trafficked and sexually exploited [94]
• Women can be traffickers too [93]
• Different patterns of trafficking in different subregions [94]
• Almost a third of victims are children [95]
• the trafficking in women and girls is the fastest growing crime worldwide [93] [96]
• sex industry makes $ 99 million each year [93]
40,300,000,000 people live under conditions of modern slavery worldwide... [97]

[98]
What is organ trafficking?

Organ trafficking consists of any of the following activities:

a. “removing organs from living or deceased donors without valid consent or authorisation or in exchange for financial gain or comparable advantage to the donor and/or a third person;

b. any transportation, manipulation, transplantation or other use of such organs;

c. offering any undue advantage to, or requesting the same by, a healthcare professional, public official, or employee of a private sector entity to facilitate or perform such removal or use;

d. soliciting or recruiting donors or recipients, where carried out for financial gain or comparable advantage; or

e. attempting to commit, or aiding or abetting the commission of, any of these acts” [101].

This definition is part of the influential Declaration of Istanbul on Organ Trafficking and Transplant Tourism by the Transplantation Society and International Society of Nephrology [101]. It follows the Council of Europe Convention against Trafficking in Human Organs which “is the only international treaty that specifically deals with trafficking in human organs, seeking to prevent and combat trafficking in human organs, to protect the rights of victims and to facilitate co-operation at both national and international levels.” [102]. Furthermore, the UN definition of human trafficking refers to organ trafficking [103]. Although the process of organ trafficking is known in detail, the field is complex and remains opaque [104].
The nature of organ trafficking:

Diverse scholars claim that the black market of human organs is increasing worldwide [106] [107]. This trend has multiple reasons: firstly the rising demand, secondly the limited supply of legal transplantations and thirdly medical developments which make transplantations easier [103]. Like other crime fields, organ trafficking is characterized through a pluralism of actors. On the one side, there are the patients mostly from wealthier countries which face a long transplantation waiting list. To avoid years of waiting and hence minimize the risk of dying before the transplantation, some patients take unethical and illicit measures to obtain a life-saving organ. On the other side, there are the providers of organs which usually live in developing countries. Many of them are located in low-income groups and lack of alternative income [103][108]. Diverse brokers connect donors and patients as well as medical staff to carry out the operation [102][106]. While organ trafficking is illegal in most countries of the world, it is often not effectively policed in many developing states where the procedure mostly takes place [103]. While the process is well-known, there is an overall lack of reliable data about the number of trafficked organs as well as the price. The nature of organ trafficking makes this crime field highly opaque. It is scarcely reported, detected and scientifically researched. But a variety of institutional actors, policy-makers and scholars attempt to deal with the black market. Nevertheless, like in other crime fields, the available data is based on estimations [104].
Trafficking a kidney

The trafficking of kidneys is the most reported form of organ trade [104]. Especially the trafficking of kidneys is widespread due to the high demand as well as the low-risk of transplants, the standardized procedure and the lower price compared to other organ transplants [103]. Patients travel around the world to purchase kidneys [110].

The Institute for Global Financial Integrity estimated in their 2011 report that the trafficking of livers and kidneys might generate profits ranging from USD 600 million to USD 1.2 billion per year [108]. New estimations as well as data regarding other organs are not available. As the following graphics illustrate, the price donors received as well as recipients payed vary significantly. The greatest profit is generated by the brokers [111][112]. The data is based on media reports and police investigations in reported cases [111].

Prices donors received

<table>
<thead>
<tr>
<th>Country of origin</th>
<th>Amount received</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>USD 1 400</td>
<td>Goyal</td>
</tr>
<tr>
<td>Goyal</td>
<td>USD 1 740 - USD 2 400</td>
<td>Naqvi, Moazam</td>
</tr>
<tr>
<td>The Philippines</td>
<td>USD 2 300 - USD 6 300</td>
<td>Padilla, Awaya</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>USD 1 400</td>
<td>Moniruzzaman</td>
</tr>
<tr>
<td>Colombia</td>
<td>USD 1 700</td>
<td>Mendoza</td>
</tr>
<tr>
<td>Brazil</td>
<td>USD 3 000</td>
<td>Netcare case</td>
</tr>
<tr>
<td>Romania</td>
<td>USD 6 000</td>
<td>Netcare case</td>
</tr>
<tr>
<td>Moldova</td>
<td>USD 2 500 - USD 3 000</td>
<td>Vermot-Mangold, Lundin</td>
</tr>
<tr>
<td>Israel</td>
<td>USD 20 000</td>
<td>Netcare case</td>
</tr>
<tr>
<td>Turkey</td>
<td>USD 10 000 - USD 20 000</td>
<td>Medicus case</td>
</tr>
<tr>
<td>Israel</td>
<td>USD 10 000</td>
<td>Rosenbaum case</td>
</tr>
</tbody>
</table>

[111]
To sum it up…
There are no reliable statistics and data regarding the worldwide organ trafficking. The data is based on estimations deduced from literature reviews, media reports and police investigations. Instead of generating new data, publications mostly cite old statistics. Donors, recipients and brokers do not have an interest in sharing many insights. Hence, scholars face unreliable data and other research challenges.
Figures are often less valid than they appear. Unreliable data, insecure numbers and misleading information challenge researchers. Moreover, these difficulties also influence the decision-making relating to crime policies, as well as their evaluation.
In the End...

“ [...] people do want to have some number” [18]
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