

Risks of Terrorism, Homicide and Illness a Methodological Consideration

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## Risks of Terrorism, Homicide and Illness: a Methodological Consideration

by Richard J. Chasdi

### *Abstract*

*A recurring question posed to researchers is whether or not terrorism poses similar degrees of risk as other man-made or natural disasters. There are some specialists, such as John Mueller, who argue that somewhat ironically, the threat of terrorism is vastly exaggerated.[1] This begs the question : compared to what? The underlying aim of this Research Note is to point out some basic methodological and contextual issues to consider, rather than making an attempt to provide hard answers regarding relative individual and collective risks. However, an effort is made to place some empirical findings into appropriate political and social contexts. The framework for discussion includes: basic conceptual problems regarding the notion of “risk”; a comparison of certain basic terrorism incident rates with rates for homicides and illness; and identification of possible future directions to gauge risk assessment within the context of a more holistic systems perspective.*

### *Introduction*

The conceptualization of risk requires much more than a delineation of type of risk from specific threats. Indeed, John Monahan suggests that even within the realm of terrorism studies, terrorism is a necessary but insufficient term that clusters a wide ranging group of phenomena, thereby in effect working to provide impediments to meaningful research about explanatory variables for specific (sub-) types of terrorist assaults.[2] For Monahan, it follows there should be efforts to standardize understandings of seminal concepts such as whether terrorist assaults comprise “a process” or are composed of discrete “events” or perhaps are either or both under certain select circumstances.[3] Still another critical issue that Monahan points to is that scholars must differentiate between the risk of terrorist assaults associated with recruitment of terrorist activists by contrast to the risk of terrorism with recruitment of constituency groups in what Monahan calls “supply roles.”[4]

Equally important, there is no one generally recognizable and widely shared conceptualization or definition of the broader notion of “risk.”[5] As David Shields at Walsh College puts it, “there is a difference between ‘risk to’ and ‘risk of’ conceptualizations.” To extrapolate, what seems significant in the case of the “risk to” notion is that underlying emphasis is placed on the object of risk (i.e., what will happen to that object), by contrast to the “risk of” notion that places emphasis on the sources and origins of “risk” as a driver of action.

At the same time, “risk to” is a more active, temporal, and proximate conceptualization of the risk condition, while “risk of” is a more dormant condition or tense that has inherent potential for change into a more active form. Moreover, there is also a range of risk “perception or

misperception” that in some circumstances might contribute to an increase or decrease of overall risk, whatever that risk is all about.[6] Put another way, there must be some way to account for “subjective risk” appraisal that essentially amounts to a random variable in data testing in survey (i.e., questionnaire) formats for example.

Seen from a slightly different angle, Monahan also notes there is a clear distinction between “risk reduction,” a concept that requires almost singular focus on “causal factors” as Kraemer et. al. (1997) put it, and “risk assessment,” that in turn revolves around “likelihood” or “probability.”[7] Indeed, what is significant here is Monahan suggestion that there are fundamental differences between threat assessment of victimization - which is the focus of this Research Note - and assessment of risk focused on the individual, namely those who are deemed to present various degrees of threat or potential threat to society as political terrorists do.[8]

### *Disparate Measures of Terrorism and Other Calamitous Threats*

Much of what is available to the researcher when thinking about “risk assessment” with respect to terrorist assaults is a set of disparate empirical studies about patterns or trends of terrorism or related phenomena that all too often rely on aggregated data results with limited utility.[9] To be sure, those broader patterns are useful, as trend assessments of terrorism have at least some predictive value for public policy initiatives.[10] Nonetheless, such aggregate results do precious little to help illuminate individual or collective risk for terrorist assaults at specific geographical locales at specific moments in time.[11]

For instance, a range of empirical results about terrorism compiled by the *National Consortium for the Study of Terrorism and Responses to Terrorism (START)* is presented by the U.S. Department of State for the evaluation of terrorism trends in 2012, presumably to help gauge risk for a variety of actors. Those data are as good an example as any of broad types of data with a range of problems that include the implicit assumption that different types of targets share the same degree of threat even at different geographical locales and at different periods of time.[12] For example, consider the chart from the START- U.S. Department of State data reproduced below.

Such relative frequencies by country are important findings that articulate the basic parameters of terrorism: the ten highest numerical amounts of terrorist assault incidents per country. As this report points out, the top four countries, namely Pakistan, Iraq, Afghanistan, and India are found in Asia, with three out of four of those countries with over 1,000 incidents. In addition, the Philippines in South East Asia ranks ninth out of the ten countries that experienced the highest number of terrorist assaults in 2012.[13]

**Table 2: Ten countries with the most terrorist attacks, 2012**

Country	Total Attacks	Total Killed	Total Wounded	Average Number Killed per Attack	Average Number Wounded per Attack
Pakistan	1404	1848	3643	1.32	2.59
Iraq	1271	2436	6641	1.92	5.23
Afghanistan	1023	2632	3715	2.57	3.63
India	557	231	559	0.41	1.00
Nigeria	546	1386	1019	2.54	1.87
Thailand	222	174	897	0.78	4.04
Yemen	203	365	427	1.80	2.10
Somalia	185	323	397	1.75	2.15
Philippines	141	109	270	0.77	1.91
Syria[2]	133	657	1787	4.94	13.44

- Although terrorist attacks occurred in 85 different countries in 2012, they were heavily concentrated geographically. Over half of all attacks (55%), fatalities (62%), and injuries (65%) occurred in just three countries: Pakistan, Iraq, and Afghanistan.
- The highest number of fatalities occurred in Afghanistan (2,632); however the country with the most injuries due to terrorist attacks was Iraq (6,641).
- The average lethality of terrorist attacks in Nigeria (2.54 deaths per attack) is more than 50 percent higher than the global average of 1.64. The average lethality of terrorist attacks in Syria (4.94 deaths per attack) is more than 200 percent higher than the global average.
- The average number of people wounded per terrorist attack was especially high in Syria, where 1,787 people were reportedly wounded in 133 attacks, including four attacks that caused 670 injuries.
- In contrast, the rates of lethality for India (0.42 deaths per attack), the Philippines (0.77 deaths per attack), and Thailand (0.78 deaths per attack) were relatively low among the countries with the most attacks.

While these findings are useful, what is also significant is that the foregoing are aggregated measures of attacks by country that do not distinguish between urban and rural locales, region of the country, locales rich with precious metals and other natural resources, neighborhood clusters, and individual neighborhoods. [14] The variation in the range of “average numbers killed per attack” from .41 in the case of India, to 4.94 persons killed per incident in the case of Syria underscores the importance of “contextual factors” intrinsic to specific operational environments such as the “civil war” in Syria that began in 2010.[15] What seems significant for our purposes, namely to acquire some rough assessment of risk from available data, are mean number of deaths and injuries that result from terrorist assaults. Plainly, the mean rates are comparatively low when terrorism is compared to other broader forms of political violence and armed conflict that do not have a clear beginning, middle, and end point as do terrorist assaults or other specific acts of force.

For example, Syria, in the throes of a full blown civil war where the highest means of death and injury were found, had a mean for death of only 4.94 persons killed (657/133) per attack, by contrast to a rate of injuries over 2.7 times as large, but still with a mean of only 13.44 (1,787/133). In turn, the average rate of death in Afghanistan, itself characterized by an insurgency between the Taliban and affiliate groups against the Karzai government and its ISAF allies, experienced terrorist assaults where the mean for deaths, presumably over the

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entire country, was only 2.57 (2,632/1,023), in comparison to the mean for injuries that was not much higher at 3.63 (3,715/1,023). Clearly, these are rather crude indicators for the reasons previously mentioned, but it is probably no exaggeration to say that the likelihood of victimization by means of a terrorist assault is less than the likelihood for certain other discrete acts of political violence such as sustained warfare or large scale natural disasters like floods or pandemics.[16]

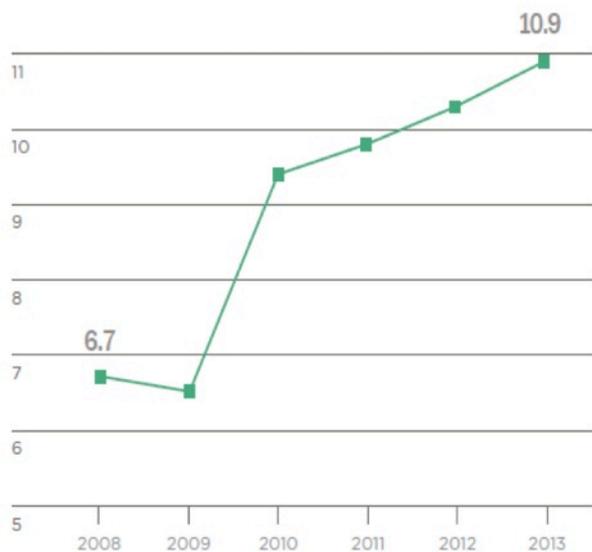
To reiterate, the problems associated with an assessment of accurate measures of risk across different types of “man-made” or natural phenomena is from the start hampered in many data compilations by the absence of more specific disaggregated data for specific geographical locales and political factors such as holidays or commemoration of landmark events that are inextricably bound up with increased risk.[17] Put another way, political events are a dynamic and critically important part of any “contextual environment” and commemoration of major or minor political events, landmark events, religious holidays, or secular holidays as well as reactions to government assassinations or war may increase - or conceivably decrease by means of “augmented security” - the likelihood of terrorist assaults and victimization.

### *Homicide Rates Worldwide*

As if that were not enough of a problem, there is no standardized unit of measurement to compare terrorism assault rates of death to rates of death for other calamitous events. To the best of my knowledge, this appears to be the case for measurement across countries and within particular countries, as there is no completed data set I am aware of that uniformly drills down to “city-suburb/town/village” designations within regions of a country for the broad spectrum of assaults under consideration, that also simultaneously promotes standardization efforts across data compilations.[18] For example, the “Global Peace Index-2013”(GPI) produced by the Institute for Economics Peace, reports that homicide rates in the world increased precisely due to the fact that murder rates in South America, the Caribbean, Sub-Saharan Africa, and Central America have risen, “....skewing what is the declining trend for the rest of the world.”[19] In the Global Peace Index -2013, “Figure 1.14” provides a rather broad brushed appraisal of the mean homicide rate for chosen GPI countries that presumably derives from United Nations data.[20] The aggregate mean for the basket of GPI countries reflects an average of relative frequencies of homicide per 100,000 of the population for the 2008-2013 interval.

**FIGURE 1.14** Average homicide rate per 100,000 for GPI countries, 2008-2013

*The global number of homicides is increasing according to GPI data.*



**LEGEND:**

■ Average of all countries

**SOURCE:** United Nations Survey of Crime Trends and Operations of Criminal Justice Systems; EIU data; note, years on bottom axis refer to the year of GPI release.

This chart reflects findings where a basket of GPI countries had a mean of 6.7 murders per 100,000 of the population in 2008, by contrast to slightly less in 2009. A spike begins from 2009-2010, and the murder rate per 100,000 people continues to increase with an average rate of 10.9 per 100,000 in 2013. At this moment in time, there is no effective way to compare data on terrorism offered by START's GTD- Department of State cited earlier to the aggregate country homicide rates provided by the "Global Peace Index 2013" study because of standardization measurement problems.[21] In the broader sense, this is an underlying problem with many data sets that makes comparisons of relative frequencies of events and next, calculating accurate risk assessment exceedingly difficult.

At the same time, it is probably no exaggeration to say that while environmental infrastructure effects, such as economic blight, overcrowding and crime, coupled with family and small group interactions motivate a very small percentage of individuals to "act out" based on political motivations (i.e., terrorism) by contrast to a somewhat larger percentage who engage in common criminal activity, the number of people exposed to economic blight conditions and disruptions in family and social circles but who somehow navigate through by means of self medication (i.e., drugs or alcohol) is far greater.[22] In turn, that suggests that such effective and sustained environmental pressures have greater effects on a larger segment of society with continuous duration thereby in effect making rates of homicide, rape, and suicide as well as other crimes a more significant cause for concern than terrorism when thinking about the chances of victimization.

*A Comparison: Intentionally Inflicted Deaths and Other Forms of Violent Death*

Much of the data compiled in the “Global Burden of Armed Violence 2011” report are consistent with the aforementioned data compiled by the “Global Peace Index”.[23]



In the broadest sense, those findings chronicle that out of 526,000 violent deaths worldwide from 2004-2009, some 75.285% or 396,000 were classified as “intentional homicides,” by contrast to 54,000 or some 10.26% of the total that are classified as “unintentional homicides.” In turn, 21,000 deaths or almost 4.0% of the total amount are classified as “killings during legal interventions,” defined by the “Global Burden of Armed Violence 2011” report as “...violent deaths of civilians by law enforcement and state security forces during legal interventions -...”[24] What seems significant here is that only some 10.45 % of violent deaths (55,000/526,000) happened within the context of “direct conflict deaths” (i.e., “terrorist activities” and/or “conflict settings”) and that is only 1,000 more chronicled cases compared to the 54,000 “unintentional homicides” chronicled. [25] At the same time, the term “terrorist activities” is an extremely imprecise and nebulous term; it might conceivably include deaths of civilians in counterterror assaults or civilian deaths as terrorists prepare explosives improperly. That sort of imprecision might skew results in data replication efforts. Notwithstanding that, based on “Global Burden of Armed Violence” data, the amount of death associated with common criminal activity (i.e., “interpersonal violence,” “gang violence,” “economically

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motivated crime”) far exceeds, by a factor of at least 7.2, the amount of death associated with terrorism (55,000 X 7.2 = 396,000).

In turn, additional data from the “Global Burden of Armed Violence 2011” provides a breakdown by country and region of “violent death per 100,000 of population” from 2004 to 2009.” It identifies 58 countries with 10 or more violent deaths per 100,000 of a country’s population. The five countries that are found to have the highest annual “violent death” rate per 100,000 of the population are: El Salvador (62.0), Iraq (60.0), Jamaica (58.1), Honduras (49.0), and Colombia (44.5). In addition, those data illustrate that many countries with comparatively high rates of “violent deaths” per 100,000 of the population are found in the developing world. The glaring exceptions are Puerto Rico and the Russian Federation that are found to have a “violent death” rate of about 20 per 100,000 of the populace and 17.2 per 100,000 respectively.[26] To put those results in some perspective, the World Health Organization (WHO) “Leading Cause of Death” global statistics for 2011 report that the risk of “lower respiratory infections” that result in death is “46 deaths per 100,000 population,” by contrast to “43 deaths per 100,000 population” elicited by “chronic obstructive pulmonary disease.”[27]

The WHO report illustrates that almost one third of those countries (27.5% or 16/58 states) has been characterized by a “main armed conflict” or one that has recently passed into eclipse. In 10 of those 16 states, “...the incidence of homicide is actually greater than the number of direct conflict deaths.”[28] The underlying focus on intra-national violence as opposed to interstate war dovetails well with the perspective taken by Cooper, Merz, and Shah’s work where specific sets of empirical findings are framed by descriptions and statistics that point to a general decrease in *international* conflict and the intensity of warfare deaths in the contemporary world.[29]

### *The Interlocking Condition of Natural Disasters, Illness, and Violence*

Turning to the matter of comparison between murder rates, other forms of violent events, and deaths from illness and environmental factors, it is clear that illness and deaths from so-called “natural factors” are inextricably bound up with one another; man-made environmental factors or “natural” ecological dynamics are influenced by human behaviour.[30] For example there are a series of cities in China where it is commonplace to note that cancer rates and, by extrapolation cancer related deaths are extremely high. Such figures point to the ineluctable conclusion that a more holistic or systems-wide set of approaches for thinking about risk is called for, to elicit the generation of cumulative statistics of deaths for a more accurate appraisal of death risks. Indeed, it is entirely possible that government negligence or malfeasance associated with environmental disaster areas could spawn political terrorism or deaths related to criminal activities in some countries. To be sure, the Chinese example also underscores the essential need for analysis by region or city clusters including efforts to isolate

and identify modalities between types of death outcomes and complex sources and origins of causal factors.

Much of the data available from IGO and NGO sources about death from illness is also comprised of aggregate data by country or region.[31] At the same time, it is probably no exaggeration to say that disaggregated data is more intrinsic to methodologies in this public policy domain as specific geographical locales afflicted with such problems are oftentimes almost the sole focus of many studies. In the case of broader overviews of death rates from illness by region, WHO statistics for the single most predominant causes of death provide numerical amounts and percentage rates.

For example, there were 1,018,000 “cardiovascular diseases” related deaths in the “African Region” in 2011 or 10.7 % of the total number of deaths (9,538,000) across articulated “cause” categories. In a similar vein, there were 1,859,000 cardiovascular disease related deaths in the “Region of the Americas” that comprised 29.5% of the 6,302,000 deaths total across categories. Plainly, we can extrapolate that the scope of deaths for illness by region eclipses rates for terrorist assaults.

Summary: Deaths (thousands) by cause region												
Year	2011											
	African Region		Region of the Americas		South-East Asia Region		European Region		Eastern Mediterranean Region		Western Pacific Region	
Population (thousands)	857380		938646		1830361		899442		604475		1807951	
GHE 2012 cause category	Deaths (000s)	% total	Deaths (000s)	% total	Deaths (000s)	% total	Deaths (000s)	% total	Deaths (000s)	% total	Deaths (000s)	% total
<b>H. Cardiovascular diseases</b>	1018	10.7	1859	29.5	3651	26.0	4371	48.3	987	25.8	4700	39.7
1. Rheumatic heart disease	37	0.4	14	0.2	132	0.9	36	0.4	36	0.9	80	0.7
2. Hypertensive heart disease	80	0.8	188	3.0	234	1.7	224	2.5	71	1.9	259	2.2
3. Ischaemic heart disease	324	3.4	852	13.5	1614	11.5	2245	24.8	463	12.1	1527	12.9
4. Stroke	448	4.7	426	6.8	1407	10.0	1270	14.0	308	8.1	2386	20.1
5. Cardiomyopathy, myocarditis, endocarditis	57	0.6	68	1.1	107	0.8	121	1.3	37	1.0	68	0.6
6. Other circulatory diseases	71	0.7	311	4.9	156	1.1	476	5.3	72	1.9	380	3.2
<b>I. Respiratory diseases</b>	197	2.1	402	6.4	1518	10.8	354	3.9	226	5.9	1183	10.0
1. Chronic obstructive pulmonary disease	89	0.9	275	4.4	1232	8.8	240	2.7	151	3.9	981	8.3
2. Asthma	52	0.5	12	0.2	209	1.5	19	0.2	34	0.9	48	0.4
3. Other respiratory diseases	56	0.6	114	1.8	78	0.6	95	1.1	41	1.1	154	1.3
<b>J. Digestive diseases</b>	356	3.7	319	5.1	627	4.5	428	4.7	138	3.6	312	2.6
1. Peptic ulcer disease	43	0.4	15	0.2	107	0.8	31	0.3	16	0.4	36	0.3
2. Cirrhosis of the liver	143	1.5	122	1.9	307	2.2	199	2.2	71	1.8	139	1.2
3. Appendicitis	22	0.2	4	0.1	5	0.0	3	0.0	1	0.0	4	0.0
Other digestive diseases	149	1.6	178	2.8	209	1.5	195	2.2	50	1.3	134	1.1
<b>K. Genitourinary diseases</b>	129	1.4	179	2.8	391	2.8	141	1.6	76	2.0	191	1.6
1. Kidney diseases	94	1.0	131	2.1	291	2.1	92	1.0	59	1.5	147	1.2
2. Hyperplasia of prostate	0	0.0	2	0.0	0	0.0	1	0.0	0	0.0	2	0.0

**Final Reflections**

There are several underlying themes throughout this Research Note that deserve attention. First, there is a significant difference between risk appraisal and the presentation of cumulative

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statistics about terrorism, related events, and a variety of natural calamities caused by illness - be it directly or as a result of other natural events such as tornadoes, flood, earthquakes, or hurricanes. All too frequently, there is no standardized unit of measurement available to make even the roughest comparisons between frequency rates, let alone intensity magnitude rates. As if that were not enough of a problem, there are different ways of appraising risk: the notions of “risk of” and “risk to” that Shields described are only two conceptualizations of risk. Indeed, that condition parallels the many and competing definitions of the notion of “resiliency” found in the literature.[32] In future endeavors, scholars might have to develop parallel conceptualizations of risk appraisal for what Zinnes would call “integrative” studies.[33] This is also warranted by the fact that relative occurrences of terrorist attacks and/or death, homicide and different types of illnesses are usually associated with broader “conflict conditions” - a term which itself is problematic as all societies are plagued with social, economic, and political inequalities and consequently, a host of “conflict conditions.”[34]

At the same time, the problem or set of challenges and opportunities is much more fundamental and even more complex. Plainly, we can extrapolate from some of the data presented to see how “feedback loops” between disease and malnutrition (e.g., malnutrition leads to illness; a mother who is ill cannot provide for children who become malnourished), indirect pathways of effect between “disease” and “malnutrition,” and “educational attainment” influence outcomes.[35] Indeed, it is not difficult to see how links between lack of educational attainment, and the low socio-economic status (SES) that follows, can lead to a condition of “frustration-aggression” that for some, but certainly not all, may lead to criminality and for a smaller number, to terrorism or other forms of political violence.[36]

As previously mentioned, it is not difficult to conceive of a situation where government mismanagement or malfeasance with respect to public policy (e.g., pollutants, resource distribution) could trigger both non-violent demonstrations and the use of force from those affected directly or indirectly. What this means is that in the future, more holistic models that take into account different frameworks (e.g., issue areas such as malnutrition, illness, suicide, socioeconomic status, terrorism, refugee and internally displaced persons) and the set of interconnections within each and across such frameworks, should be crafted with standardized units of measurement, thereby in effect working to delineate sub-systems of cause and effect.[37] Such a “systems approach” to thinking about the effect and risk of terrorism, whether it uses a “complex” pathway analysis methodology over and beyond one directional path analysis, or some other methodology, is a goal worthy of future research endeavors.

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**Notes**

- [1] John Mueller (2004). "A False Sense of Insecurity?" *Regulation*. Fall, pp. 42-46.
- [2] John Monahan (2011). "The Individual Risk Assessment of Terrorism" In *Psychology, Public Policy, and Law*. 10 October. (Online First Publication doi:10.1037/a0025792), pp. 14-17.
- [3] *Ibid*, pp. 15-16, 13, 6-8.
- [4] *Ibid*, p. 16.
- [5] For instance, Alex Schmid defines "risk" as "the degree of danger associated with a given operation, course of action, or failure to act in a crisis situation," adding, that "for mathematical modeling purposes, risk is often expressed as the probability of an unwanted occurrence multiplied by the severity of its consequences." – Alex P. Schmid. *The Routledge Handbook of Terrorism Research*. London & New York: Routledge, 2011, p. 683.
- [6] Jervis, Robert (1976). *Perception and Misperception in International Politics*. Princeton, N.J.: Princeton University Press.
- [7] J. Monahan (2011), pp. 6n7, 4. – A. P. Schmid describes "risk assessment" in terms of "calculation and/or simulation of the degree of danger attached to a course of action for the purpose of uncertainty reduction." – A. P. Schmid, *op. cit.*, p. 683.
- [8] J. Monahan, *op.cit.* ,pp. 20, 17-18, 27-28.
- [9] J. Monahan, *op. cit.*, pp. 17, 14-15. Plainly, such data about rates murder and terrorist assaults by region and city do exist but there is a problem with standardization across studies that include coding issues. That emergent reality is what Dina A. Zinnes might call a condition with an emphasis on "cumulative" rather than on "integrative" processes. Dina A. Zinnes (1976). "The Problem of Cumulation" In *Search of Global Patterns*, Ed. James Rosenau New York: Free Press; Dina A. Zinnes. (1976). *Contemporary Research in International Relations: A Perspective and a Critical Appraisal*. New York: Free Press.
- [10] Richard J. Chasdi (2010). *Counterterror Offensives for the Ghost War World: The Rudiments of Counterterrorism Policy*. Lanham, MD: Lexington Books; Richard J. Chasdi (2002). *Tapestry of Terror: A Portrait of Middle East Terrorism, 1994-1999*. Lanham, MD: Lexington Books; Richard J. Chasdi (1999). *Serenade of Suffering: A Portrait of Middle East Terrorism, 1968-1993*. Lanham, MD: Lexington Books.
- [11] Tara Cooper, Sebastian Merz, and Mila Shah (2011). "A More Violent World? Global Trends in Organized Violence." In *Berghof Handbook for Conflict Transformation*. Bergohof Foundation 42 (<http://www.berghof-handbook.net/>)
- [12] U.S. Department of State. "National Consortium for the Study of Terrorism and Responses to Terrorism: Annex of Statistical Information, Office of the Coordinator of Counterterrorism, Country Reports on Terrorism 2012 Report, May 30, 2013."
- [13] *Ibid*.
- [14] One research project that attempts some of this is the "Global Black Spots – Mapping Global Insecurity Program", conducted at Syracuse University in the Maxwell School of Citizenship and Public Affairs. Dr. Bartosz Hieronim Stanislawski Research Fellow, Moynihan Institute of Global Affairs and Institute for National Security and Counterterrorism e-mail correspondence, November 29, 2010; December 14, 2010.
- [15] R. Chasdi (2010), *op. cit.*
- [16] Khusrav Gaibullov and Todd Sandler (2008). "The Impact of Terrorism and Conflicts on Growth in Asia, 1970-2004." ADBI Institute Discussion Paper No., pp. 113 & 6. (<http://www.adbi.org/files/dp113.terrorism.impact.growth.asia.1970.2004.pdf>). Still, terrorist assaults have degrees of underlying economic cost. According to Gaibullov and Sandler, in "Western Europe...each additional transnational terrorist incident per million persons reduced economic growth by about 0.4 percentage points in a given year." In the case of Israel, Gaibullov and Sandler describe a study in 2004 by Eckstein and Tsiddon that illuminates, "...that Israel lost 10% of its per capita income during the three-year intifada beginning in the fourth quarter of 2000. In effect, terrorism reduced Israeli economic growth to zero during this violent era."
- [17] Richard J. Chasdi (1999). *Serenade of Suffering: A Portrait of Middle East Terrorism: 1968-1993*. Lanham, MD: Lexington Books; Richard J. Chasdi (2002). *Tapestry of Terror: A Portrait of Middle East Terrorism, 1994-1999*. Lanham, MD: Lexington Books.
- [18] This type of "geo-spatial analysis" with "integrative" approaches to analysis of "contextual factors" is now undertaken at Argonne National Laboratories. At Walsh College, the newly established Center for Strategic Analysis and Assessment (CSAA) will partner with Argonne National Laboratories to conduct a series of research projects that use a systems analysis approach to delve into broader national security policy issues.
- [19] Institute for Economics & Peace (2013), p. 40.
- [20] One would expect that for homicide, the quintessential crime, reliable data are available worldwide. However, that is not the case. As Jan van Dijk has pointed out, "...police-recorded homicide rates suffer to some extent from the same flaws of underreporting and poor recording as other police-recorded crime statistics. In countries where security forces are among the main perpetrators of violent crimes, reporting and recording will be low. In many developing countries, administrative systems and communication infrastructures of police services preclude proper recording of even the most serious types of crime.(...)"...in developing countries, even for as serious a crime as homicide, a significant proportion of crimes committed is never reported to the police or never recorded. In many developing countries, even police-recorded homicides have their dark numbers." – J.v. Dijk. *The World of Crime: Breaking the Silence on Problems of Security, Justice, and Development Across the World*. Los Angeles, Sage Publications 2008, pp. 75-76.
- [21] An additional problem is the quality of medical services: Attempted murder rates in two countries might be the same but in the country with better medical emergency services the survival rate is likely to be much higher.
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[22] J. Monahan, op. cit., p. 21; Larry J. Siegel and Chris McCormick (2010). *Criminology in Canada: Theories, Patterns, and Typologies; Fourth Edition*. Toronto, Ontario: Nelson Education Ltd; Albert J. Reiss Jr. and Jeffrey A. Roth. (Eds.) (1993). *Understanding and Preventing Violence*. Washington, DC: National Academy Press; David P. Barash and Charles P. Webel (2002). *Peace and Conflict Studies*. Thousand Oaks, CA: Sage Publications.

[23] Global Burden of Armed Violence 2011 report ([www.genevadeclaration.org](http://www.genevadeclaration.org)); Blogs.worldbank.org (<http://blogs.worldbank.org/publicsphere/today-s-grimfographic-how-many-people-die-violent-death-where-and-how#comment-1384>); Institute for Economics & Peace. (2013).

[24] "Global Burden of Armed Violence" (2011), pp. 44 & 51. In contrast, "intentional homicides" are defined in this compilation as, "...deaths as a result of interpersonal violence, gang violence, economically motivated crime -..." In turn, "unintentional homicides" are defined as, "...deaths as a result of 'accidental killings' -..." Lastly, "direct conflict deaths" are defined as "...deaths as a result of armed conflicts, political violence, and terrorism - ..." This last category seems problematic as both "and" and "or" appear to be used in that "Global Burden of Armed Violence" report.

[25] Ibid. We are told that, "the GBAV database – a comprehensive database on lethal violence covering the years 2004-09 highlights that, on average, an estimated 526,000 people died violently...."

[26] Ibid., p. 53.

[27] World Health Organization. "WHO regions," "Disease and Injury Regional Mortality Estimates for 2000-2011." ([http://www.who.int/healthinfo/global\\_burden\\_disease/estimates\\_regional/en/index.html](http://www.who.int/healthinfo/global_burden_disease/estimates_regional/en/index.html)).

[28] "Global Burden of Armed Violence 2011," p. 52.

[29] T. Cooper, S. Merz, and M. Shah (2011). op. cit.

[30] Ibid., pp. 25-26.

[31] For example, see "Lifetime odds for selected causes, United States 2009" where the top three conditions that elicited death include (1) "Heart disease 1 in 7 (14.2%); "Cancer 1 in 7" (14.2%); (2) "Chronic lower respiratory disease 1 in 28" (3.6 %) (3) "Intentional self-harm 1 in 106" or a little less than 1.0%. (<http://img.gawkerassets.com/img/18uzs80jqyy7agif/original.gif>). To be sure, those empirical results would be more informative if underlying distinctions were made by race, gender, socio-economic status, region, and urban/rural distinctions to reflect subtleties and nuances.

[32] Richard J. Chasdi (2013). "A 'Resiliency Continuum' of Terrorist Assaults at the Nation-State Level of Analysis." *Armed Forces and Society*, March 7 (Online First:doi10.1177/0095327X1247) (publication pending).

[33] Zinnes (1976a); Zinnes (1976b).

[34] Institute for Economics & Peace. "Global Peace Index 2013- Measuring the State of Global Peace." New York: pp. 40-43, 1-2([http://www.visionofhumanity.org/pdf/gpi/2013\\_Global\\_Peace\\_Index\\_Report.pdf](http://www.visionofhumanity.org/pdf/gpi/2013_Global_Peace_Index_Report.pdf)); "Global Peace Index 2013: the full list." *Datablog: Facts are sacred*. ([http://www.guardian.co.uk/news/datablog/2013/jun/11/global-peace-index-2013?goback=%2Egde\\_1841466\\_member\\_250542686](http://www.guardian.co.uk/news/datablog/2013/jun/11/global-peace-index-2013?goback=%2Egde_1841466_member_250542686)). Presumably, these terms refer to "violent," namely physical conflict, but of course violence is a continuous variable marked by degrees; it is not a dichotomous variable. The terms "domestic conflict," "local conflict," as well as "international conflict" are used in that publication for example,

[35] British Broadcasting Corporation. 2013. "Malnutrition hits school performance, Warns Save the Children." 27 May ([http://www.bbc.co.uk/news/world-22685208#story\\_continues\\_1](http://www.bbc.co.uk/news/world-22685208#story_continues_1)); A. Reiss and J. Ross (1993), op. cit., pp. 296-298, 304.

[36] A. Reiss and J. Ross, op. cit.; John Dollard, Leonard W. Doob, Neal E. Miller, O.H. Mowrer, and Robert R. Sears (1939). *Frustration and Aggression*. New Haven, CT: Yale University Press.

[37] David L. Sallach (2013). "Topos Modeling of Social Conflict: Theory and Methods." Computational institute, Argonne National Laboratories, Argonne IL; University of Chicago, Chicago, IL., 1-13; Molly M. Ginty (2013). "Analysis: pollution risks worse for developing world women." UPI.com ([http://www.upi.com/Top\\_News/Analysis/2013/05/20/Pollution-risks-worse-for-developing-world-women/WEN-3621369080433/](http://www.upi.com/Top_News/Analysis/2013/05/20/Pollution-risks-worse-for-developing-world-women/WEN-3621369080433/)); BBC News World. 2013. "More than seven million refugees displaced in 2012 – UN" (<http://www.bbc.co.uk/news/world-22963060?print=true>); Monahan (2011), 22. It follows from Monahan's work that what amounts to a "systems approach" or perhaps a "sub-systems approach" is articulated by Ginges, Hansen, and Norenzayan (2009) who inform us in their "coalitional commitment hypothesis" that religion serves as an indirect explanatory factor in suicide terrorist assaults. Monahan suggests that is the case precisely because religious frameworks, but not necessarily religious observance, essentially craft or reinforce what Choi and Bowles (2007) call "parochial altruism."