

Measuring Human Security: Overcoming the Paradox

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Comments and suggestions welcomed.

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Human security is a new and contested concept. Although gaining legitimacy in many academic and policy communities, many argue that it has no single accepted definition, no universal foreign policy mandate and no consensus-commanding analytic framework for its measurement. For others this is of little concern, that ‘human security’ was the coalescing force behind the International Convention to Ban Landmines and the International Criminal Court is enough to prove that it is both representative of popular sentiment and legitimate as a tool of international policy making. With consideration to these differing views, an exercise in measurement is emerging that could substantially contribute to the shaping of the evolving concept

There are six existing methodologies for measuring human security². Each uses a different definition and each measures a different combination of threats. They all, however, are subject to the same paradox – that the broader the definition of included harms, the more difficult meaningful measurement becomes.

Over the past year and half, I have developed a new methodology for measuring the broad UNDP conception of human security that addresses this problematic. It uses sub national data to map and spatially analyze regionally relevant human security threats. The methodology is introduced below and will be described in detail in an upcoming Liu Institute for Global Issues report.

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² See Owen, Taylor. 2002. Body Count: Rationale and Methodologies for Measuring Human Security”. *Human Security Bulletin*. October, Vol.1 No. 3

Measuring Paradox

The traditional notion of security, rooted in the protection of the state and relying on an anarchistic balance of power for peace and stability, has proven to be insufficient in addressing the majority of harms people face. People are not dying from interstate war, they are dying from disease, starvation, environmental disasters, violence and civil war. This discrepancy was highlighted and exasperated by the end of the cold war.

In order to address those events, conditions and actions actually effecting peoples' lives, a proposed alternative to traditional security shifts the referent object of security from the state to the individual. Where as a security threat was once only something that threatened the integrity of the state, under the human security rubric, it is anything that threatens the integrity of the individual. While the concept of human security more accurately addresses the majority of harms, it also poses some difficult analytic and policy problems, namely, how does one distinguish and prioritize threats if all harms are security concerns?

In response to this problematic, six proponent of human security have developed measurement methodologies³. Each, however, uses a different definition of human security and therefore uses a different list of indicators.

The following figure shows the range of indicators used by each methodology and demonstrates how much of the broad UNDP definition each one incorporates.

Figure 1 The Measurement Spectrum⁴

	Economic Security	Food Security	Health Security	Environmental Security	Personal Security	Political Security	Community Security
Generalized Poverty Index	■		■			■	■
Human Security Audit	■	■	■	■	■	■	
Index of Human Insecurity	■		■	■		■	■
Human Security Report					■		
Harvard School of Public Health	■						■
Hummel: Factor Analysis	■	■	■		■	■	

What becomes clear if this chart is paralleled with the feasibility of each methodology, is that when attempts are made to broaden an index by including more

³ see figure 1 below.

⁴ For details on these methodologies see respectively, King and Murray 2000, Bajpai 2000, Lonergan et al. 2000, Harvard website, Leaning et al. 2000 and, Rummel website.

indicators, issues of data availability, integrity and aggregation become increasingly problematic⁵. This results in a difficult paradox:

The more conceptually accurate -broad- a methodology attempt to be (i.e. closer to representing all possible threats), the less practically and analytically feasible it becomes.

As a methodology expands its conceptualization of human security, closer to the original broad UNDP definition, it becomes increasingly difficult to both aggregate and differentiate between each method's autonomous variables. In addition, particularly on a global scale, the data simply are unlikely to be available to fill out a "laundry list" of threats for every country. This leads to either significant gaps when comparing one country to another, or the use of old, problematic and unreliable data. This paradox has resulted in methodologies being either narrow and feasible or broad and impossible to implement and/or inaccurate.

The new measuring methodology introduced below incorporated the following three solutions to the measurement paradox.

Table 1 Measuring Problems and Proposed Solutions

Problems	Solutions
Data Availability	Only measure regionally relevant threats Look sub-nationally for data
Data Integrity	Accept subjectivity, mitigated by local knowledge and disciplinary experts
Data Aggregation	Use space as a common denominator Geographic Information Systems (GIS)

Absolutely integral to this re-conceptualization of human security measurement is the notion of space – All the above indexes rely solely on national level data. By shifting our perception of space, and measuring insecurity at the local level, I will argue that a much more meaningful representation may be achieved and the problems of the measuring paradox overcome.

Brief Overview of Methodology

Definition

Human Security is the protection of the vital core⁶ of all human lives from critical and pervasive economic, environmental, health, food, political and personal threats.

This definition remains true to the broad nature of human security, while clearly separating it from more general concepts of human wellbeing and development.

⁵ For extensive discussion on the problems of data collection see, Collier, 2001; Brauer, 2001; Mial, 2001; Mack: 2002.

⁶ For a discussion of the concept of 'vital core' see (Human Security Commission, 2002).

With the goal of remaining broad, the definition recognizes that there is no difference between a death from a flood or from a gun, all are considered threats to human security. However, for analytic clarity it separates and groups all possible threats into six threat categories⁷.

Making the referent object 'all human lives' focuses on the individual while also indicating a universalism in its mandate. As the highest human insecurity is likely to occur in the developing world, this is particularly important.

Reference to 'vital core' and to 'critical and pervasive threats' establishes both severity and immediacy. As there are an unlimited number of possible threats, only the most serious, those that take or seriously threaten lives, are included. This is important in order to ingrain a necessary degree of severity within the concept

Perhaps most importantly, this definition is dynamic. It refrains from simply listing threats, recognizing that no possible list can be exhaustive. Rather, it remains analytically focused by setting a threshold surpassing which, a security threat is defined.

Stage One: Threat Assessment

Faced with the potentially unmanageable list of human security threats, most measuring methodologies use the laundry list approach, simply including what they feel are legitimate threats to the individual.

This is a theoretically ambiguous approach. Instead, indicators should be determined by what threats actually surpass the threshold of human security.

The first stage of this methodology, therefore, determines from grounded empirical and qualitative research, what specific threats affect a particular country or region.

This is done by a series of interviews with regional and local experts in each of the 6 security categories. They are asked what issue within their area of expertise meet the definition of a human security threat. There are no limits to the number of threats in any category as the only criteria is that they surpass the threshold of human security.

The most important point about this stage of the methodology is that it has reduced a seemingly endless list of threats (anything that can seriously harm an individual), down to those that actually effect a particular country or region. By shifting scales from the national to a local focus, human security becomes a manageable concept, going from hundreds of threats, down to a handful.

Stage 2: Data Collection and Organization

Now that the human security threats affecting a country have been determined and classified, data detailing them must be collected. These data can be quantitative or

⁷ These categories are based on the UNDP definition of human security. See the (Human Development Report, 1994)

qualitative, but all must have a spatial reference.

Clearly a key to this stage is data availability. A central criticism of broad measuring indexes is that it is incredibly difficult to get accurate data for all possible threats from all possible countries. This methodology addresses this concern by only including regionally relevant threats and by acquiring data from local organizations.

Data availability is often dictated by the presence and severity of the threat itself. This connection works in tandem with the human security threshold in the following manner – in countries with limited resources for data collection, data set availability often corresponds with threat severity, if the problem is severe enough, the chances are very good that there are data detailing it.

Similarly, although all data may not be organized in one database there are usually local organizations who collect information in their area of expertise. For example, local human rights groups monitor abuses, environmental NGO's measure flooding and droughts, and economic organizations collect poverty data.

Once data sets detailing each threat are collected, they are organized in a GIS by their spatial reference. This reference can be either a political boundary, a coordinate or a grid space. What is important is that there is a link between threat severity and location, or, space.

At this point, we can now identify the threat level for any region within the study area for any one or combination of the expert determined human security threats.

Stage 3: Data Visualization and Analysis

The first step in stage 3 is to create the base maps that will both display the varying severity of each human security threat and be used in the subsequent spatial analysis.

This is done by linking the database of the threat data sets to digital maps via their spatial references. Once this is done, each threat can be mapped. These base maps are called layers and will be the foundation for the subsequent spatial analysis.

Second, as human security focuses only on where threats are the most severe, we need to determine where the threat for each of our indicators is the highest. This is done by classifying the data based on its natural breaks before it is mapped. This process produces a map for each threat showing where the threat severity is 'high', 'medium' or 'low'.

Hotspots

Hotspots are regions of aggregated human insecurities. They are places that experience the impact of multiple 'high' level human security threats.

Hotspots are found by overlaying all of the 'high' threat maps for each of the indicators. This process identifies the regions subject to multiple 'high' levels of human insecurity – i.e. how many 'high' rankings a spatial unit has received.

Although a country as a whole may experience many different threats, these threats

are often spatially determined - different areas afflicted by different harms. A good example of this is landmines only being a security threats for contaminated villages. For all others, they are of little concern. In some locations, however, these threats overlap. The assumption here is that a person in a region suffering from 5 threats will be less secure than someone in a region with only 2 threats.

Human security hotspot analysis is useful for a number of reasons. First, conceptually, hotspots demonstrate the utility of human security and the necessity of using a broad conception. They clearly show that people remain insecure while not at war (countering traditional security), and that within their border they are suffering from a wide range of possible threats.

Second, spatially aggregating varying data sets facilitates a degree of interdisciplinary analysis that is rarely actualized in the social sciences. By way of illustration, although many people know where floods are harming people, and many people know where poverty is worst, few people know both.

Third, the practical utility of knowing exactly which harms are effecting which regions of a country are clearly evident for the development community. In addition, having all the information in a GIS system allows for easy access to vast mounts of data that generally do not get shared.

Spatial Correlations

Finally, this methodology facilitates direct causal analysis through spatial correlation. If there is a high poverty threat in all areas of violence threat, (and not vice versa), then one can be suspected of causing the other⁸.

Spatial correlations are done by posing a series of simple logic questions using the GIS: 'If A and B then C' (If high poverty and high violence then x). For example, using GIS one can create a new map showing only those regions with a high level of poverty threat AND a high level of violence threat. By conducting a series of these binary questions, spatial correlations that would be very difficult, if not impossible, to determine by manually comparing the very complex data sets, should be revealed⁹.

This addresses one of the most cited criticism of the broad conception of human security, that by lumping dozens of threats together in one category, human security does not allow for the separation of dependant and independent variables necessary for causal analysis. I propose that grouping - not amalgamating - all possible threats under one heading, and subsequently into one data set, facilitates the very type of causal analysis critics often call for.

Cambodia Case Study

This feasibility of this methodology was tested and confirmed through a case study in Cambodia based at the Cambodian Development Research Institute. The results of

⁸ An important question that could be addressed using this type of spatial analysis is 'under what conditions, i.e. poverty, is there likely to be violent outbursts? This could be done by using the methodology on historical data, an exercise that would add substantially to the credibility of the correlation.

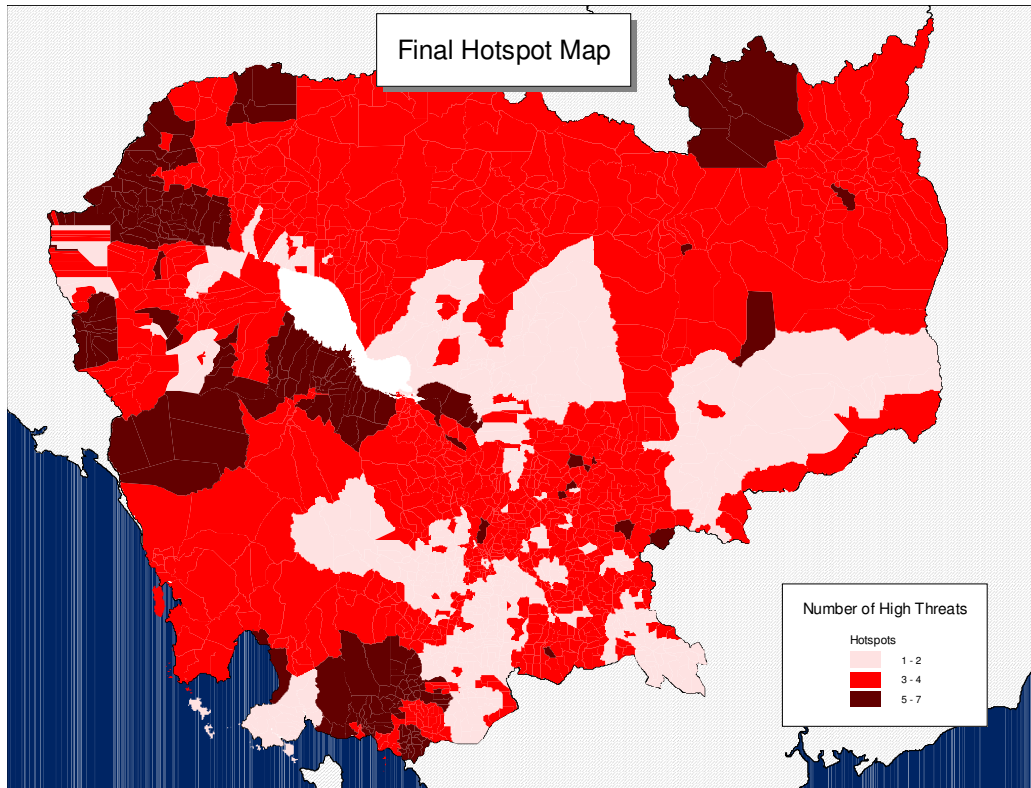
⁹ This could also be a more complex question such as if 'A and B and C but not D, then E'.

this case study will be released in the coming months as both a Liu Institute Report and as several academic articles

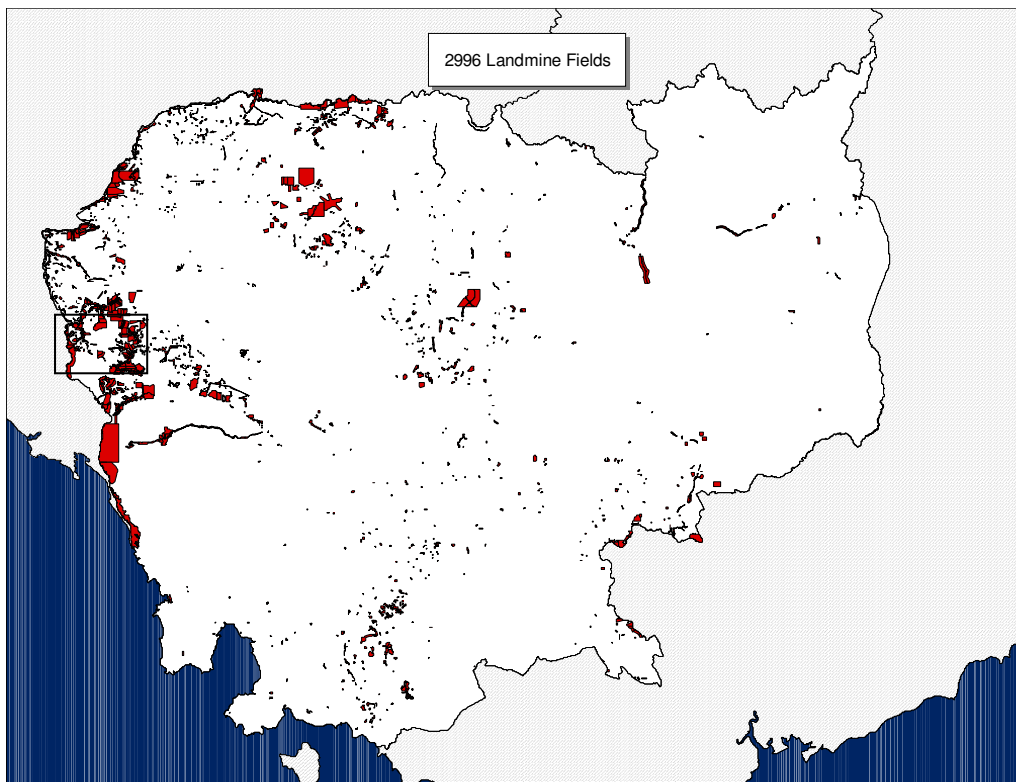
In Summary, 13 human security threats were established and spatially referenced local data were collected detailing them. An overlay analysis of high threat regions for each of the 13 threats revealed 'hotspots' of insecurity and a correlation analysis revealed a significant relationship between high landmine contamination and high poverty, dengue fever, HIV/AIDS, domestic violence and gun injuries. In addition, poverty was spatially correlated with dengue fever, domestic violence and landmines. While these correlations do not imply necessary causality, they do show a degree of significance that warrants further inquiry

The following, are examples of the final 'hotspot' map, showing areas of aggregated human insecurity, and of some of the base threat layers used for the correlation analysis.

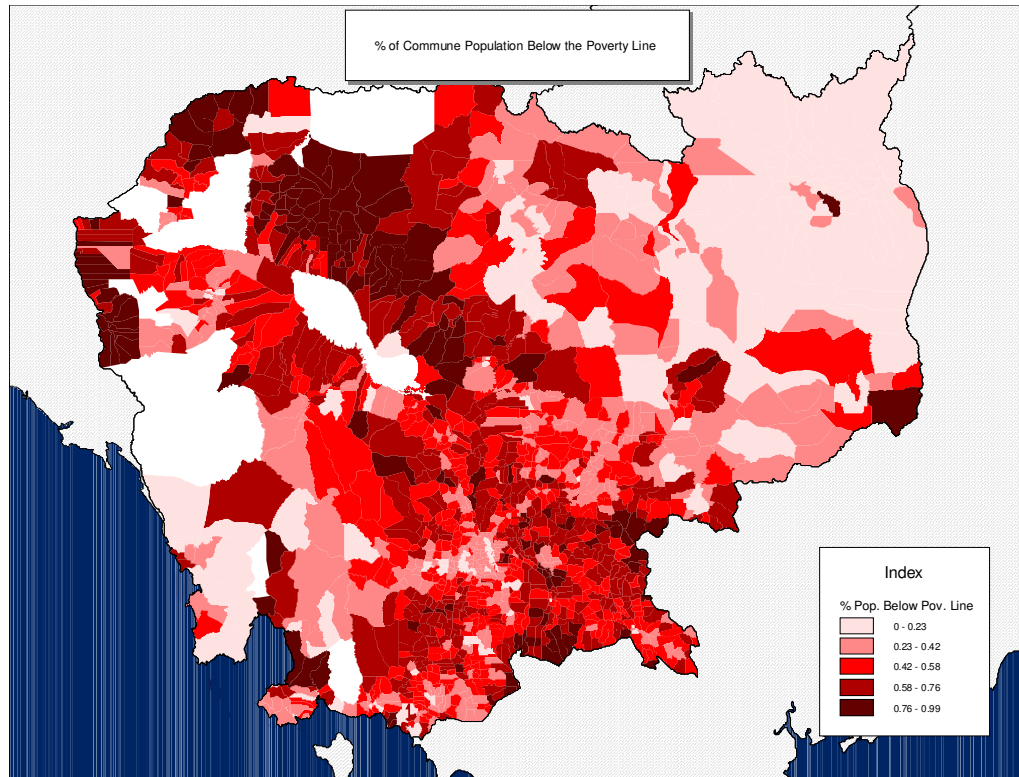
Hotspots



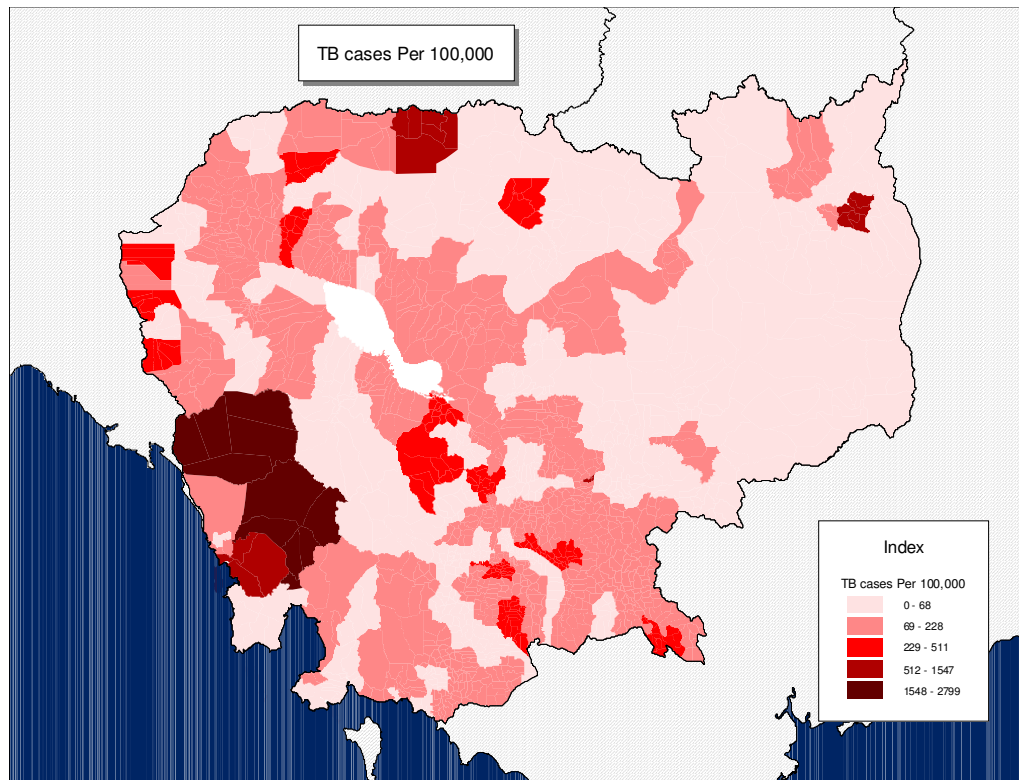
Landmines



Poverty



Tuberculosis



Conclusion

Human Security is a new and contested concept in both critical security studies and the development community. For it to remain relevant, it must have a clearly stated definition, a consensus commanding analytic tool for its assessment and a focused set of policy implications.

This methodology attempts to address each of these by setting a threshold to separate human security from human development, providing a means of aggregating variables spatially and by clearly identifying and mapping areas of high insecurity.

It is hoped that with further research this methodology will both help establish the concept of human security, and assist actors and policy makers in regions of high vulnerability.

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