

**CORE VISUALIZATION:**  
A GRAPHICAL MODEL FOR UNDERSTANDING INTERNATIONAL CONFLICT

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## TABLE OF CONTENTS

|  |           |
|--|-----------|
| INTRODUCTION .....   | 1         |
| <b>I. VISUALIZATION AS A TOOL FOR UNDERSTANDING INTERNATIONAL CONFLICT .....</b> | <b>3</b>  |
| A. Visualization & Graphical Models .....  | 3         |
| B. The Complex Nature of International Interactions .....                        | 4         |
| C. Using Visualizations to Illuminate International Conflict Analyses.....       | 5         |
| <b>II. THE CORE VISUALIZATION MODEL .....</b>                                    | <b>6</b>  |
| A. State Power (Y-Axis) .....  | 7         |
| 1. The “Core” of Core Visualization .....  | 8         |
| 2. Limiting the Model to Legitimate States .....                                 | 10        |
| B. Proximity in Geography or Socioeconomic Interest (X-Axis).....                | 11        |
| 1. Geographic Proximity to the State.....  | 11        |
| 2. Socioeconomic Proximity to the State.....                                     | 12        |
| 3. State Power & Proximity Combined .....  | 16        |
| C. Levels of Aggression & Justified Responses (Z-Axis) .....                     | 17        |
| 1. Levels of Aggression.....   | 17        |
| 2. Justifying Action in the Face of Aggression .....                             | 18        |
| 3. Integrating All Aspects of Core Visualization .....                           | 19        |
| <b>III. CONCLUSION .....</b>   | <b>21</b> |

## FIGURES

|   |           |
|---|-----------|
| <i>Figure 1 – Core Visualization .....</i>  | <i>6</i>  |
| <i>Figure 2 – State Power.....</i>  | <i>9</i>  |
| <i>Figure 3 – Unfettered State Power.....</i>   | <i>10</i> |
| <i>Figure 4 – Geography.....</i>  | <i>12</i> |
| <i>Figure 5 – Citizens.....</i>   | <i>13</i> |
| <i>Figure 6 – State Interests.....</i>  | <i>13</i> |
| <i>Figure 7 – Allies &amp; Their Interests.....</i>   | <i>15</i> |
| <i>Figure 8 – Humanity in General.....</i>  | <i>15</i> |
| <i>Figure 9 – A View of State Power and Interests.....</i>                                      | <i>16</i> |
| <i>Figure 10 – Aggression.....</i>  | <i>18</i> |
| <i>Figure 11 – Aggression &amp; Power .....</i>   | <i>19</i> |
| <i>Figure 12 – Aggression, Power, &amp; State Interest (The Core Visualization Model) .....</i> | <i>20</i> |

*A physicist, an engineer and a psychologist are called in as consultants to a dairy farm whose production has been below par. Each is given time to inspect the details of the operation before making a report.*

*The first to be called is the engineer, who states: "The size of the stalls for the cattle should be decreased. Efficiency could be improved if the cows were more closely packed, with a net allotment of 275 cubic feet per cow. Also, the diameter of the milking tubes should be increased by 4 percent to allow for a greater average flow rate during the milking periods."*

*The next to report is the psychologist, who proposes: "The inside of the barn should be painted green. This is a more mellow color than brown and should help induce greater milk flow. Also, more trees should be planted in the fields to add diversity to the scenery for the cattle during grazing, to reduce boredom."*

*Finally, the physicist is called upon. He asks for a blackboard and then draws a circle. He begins: "Assume the cow is a sphere . . . ."*

*-Lawrence M. Krauss<sup>1</sup>*

## **INTRODUCTION**

As suggested above, there is a common jest directed at physicists in reference to their tendency to reduce complex objects and concepts to "spheres," although physicists are not alone in utilizing this tool. This is done in order to take advantage of the natural logic of physical modeling by conceptualizing abstract concepts as representative two- and three-dimensional objects. To borrow a page from that book, this article will utilize three-dimensional nested spheres and two-dimensional concentric circles to illustrate the complex tensions that are involved in the interaction of legitimate states and how global justice is shaped by these behaviors. In a global context, states, their national institutions, and the movement of wealth are the primary creators and sustainers of either justice or injustice. The interactions among states and between states and their citizens naturally have significant impacts at the regional, local, and individual scales. The fair distribution of wealth at all scales also affects individual and collective freedoms. To put it another way, "[p]eople need political freedom and sufficient material wealth to pursue their life projects and flourish. Global justice is about the fair global distribution of those goods and about the institutions that are most likely to secure that distribution."<sup>2</sup> Global justice is therefore concerned

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<sup>1</sup> LAWRENCE M. KRAUSS, FEAR OF PHYSICS: A GUIDE FOR THE PERPLEXED 3-4 (2007).

<sup>2</sup> LOREN E. LOMASKY & FERNANDO R. TESÓN, JUSTICE AT A DISTANCE 6 (2015).

with the oppressed and the poor, and any normative theory for state interactions and behavior is centrally concerned with freedom and wealth, as the basic prerequisites for individual human growth or happiness.

So, assume global justice is a sphere. More specifically, assume the interaction between legitimate state power, international aggression, and justified action is a sphere. That is the foundation of Core Visualization, a tool for elucidating and analyzing global justice and international and supranational interactions in the context of promoting individual freedom and fairness. This article is intended to be an accompaniment to the general discussion on global justice, focusing on legitimate state interests and justified action in the face of various levels of aggression by other states, against other states as well as against their own and other states' citizens. Core Visualization is intended to provide a graphical model with which to better understand the interactions between conflicting states globally. This visual, less abstract framework seeks to incorporate the philosophical concepts involved in the analysis of international conflict in a physical representation of justified state action. The Core Visualization model plots the limits of justified action based on a state's inherent power, the state's proximity to the population involved (both in geographic location and socioeconomic interest), and the level of aggression the state seeks to remedy. Core Visualization is so named due to its resemblance to scientific models of the Earth's interior composition in three-dimensional space,<sup>3</sup> with both models concentric and striated in layers, and the contrived spherical foundation of the Core Visualization model helping to visually reinforce the global aspect of the subject, literally and figuratively. Envisioning the model on three axes (and in three dimensions) facilitates a holistic approach to conceptualizing justified state action in the face of international conflict.

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<sup>3</sup> See, e.g., Rebecca Morelle, *Heart of Earth's Inner Core Revealed*, BBC (Feb. 10, 2015), <http://www.bbc.com/news/science-environment-31322817> (the image associated with the article provides an example of a common way to visualize the makeup of the Earth's core).

## I. VISUALIZATION AS A TOOL FOR UNDERSTANDING INTERNATIONAL CONFLICT

Visual aids can be a crucial tool in effectively communicating abstract ideas, especially when those concepts are complex and interactive.<sup>4</sup> In the legal context, visual aids have been shown to be more effective than traditional discourse,<sup>5</sup> and can shorten the length of trials<sup>6</sup> and increase the dramatic impact of evidence.<sup>7</sup> Visualization tools can also help promote a given industry, practice, or company; illustrate why a particular legal action should be taken in response to a given set of factors; and assist in decision-making of all types through the use of graphical analysis.<sup>8</sup> In an area of law and regulation as complex as international relations, even a basic understanding of the issues may be difficult to fully grasp, to say nothing of comprehending or fully interacting with in-depth theories or detailed analyses.<sup>9</sup> This is where the transformation of the observable and underlying interplay of conflicting states into a graphical model can help shed some light.

### A. Visualization & Graphical Models

Visualization tools have a long history of being praised and encouraged as essential parts of the educational curriculum.<sup>10</sup> The importance and usefulness of these aids persists and is perhaps even more apparent today, as modern information and informative design struggles to make sense of the vast, and vastly unorganized, data-pools available online.<sup>11</sup> Communication through visual formats, like those utilized by countless webpages across the internet, “bridges the communication gap between the sophisticated presenter of information and the less sophisticated

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<sup>4</sup> GILBERT G. WEAVER & ELROY W. BOLLINGER, VISUAL AIDS: THEIR CONSTRUCTION AND USE 1-2 (1949).

<sup>5</sup> Ellen Freedman & Donald J. Martin, *New Tricks*, PA. LAW. 28, 28-29 (Oct. 2001).

<sup>6</sup> *Id.*

<sup>7</sup> Charles L. Babcock & Jason S. Bloom, *Getting Your Message Across: Visual Aids and Demonstrative Exhibits in the Courtroom*, 27 LITIG. 41, 41 (2001).

<sup>8</sup> Gerlinde Berger-Wallise et. al., *Promoting Business Success Through Contract Visualization*, 17 J.L. Bus. & Eth. 55, 55-58 (2011).

<sup>9</sup> See Harold Hongju Koh, *Why Do Nations Obey International Law?*, 106 YALE L.J. 2599 (1997).

<sup>10</sup> See generally WEAVER & BOLLINGER, *supra* note 4.

<sup>11</sup> Sarah Snow, *How to Communicate Complex Ideas With Visuals: David McCandless's Information Design*, SOC. MEDIA TODAY (May 27, 2015), <http://www.socialmediatoday.com/technology-data/sarah-snow/2015-05-27/how-communicate-complex-ideas-visuals-david-mccandless>.

audience.”<sup>12</sup> Graphical models, or visual aids that take the form of a graph, are capable of condensing complex information into more palatable and comprehensible visual representations.<sup>13</sup> Similarly, “infographics,” which have gained in popularity in the past decade,<sup>14</sup> are illustrations that seek to efficiently convey information in an often simple and usually aesthetically pleasing way.<sup>15</sup> Visualizations like graphical models and infographics offer a unique and nearly universally appealing way to envision and analyze complex subject areas, including, but of course not limited to, international relations.

## **B. The Complex Nature of International Interactions**

International law, communities, treaties, and the interdependencies of various states make conceptualizing conflicts between nations especially difficult.<sup>16</sup> Despite the now almost-constant onslaught of information provided by access both to the 24-hour news cycle and to data available on the internet, knowledge by the general public of current events and international relations remains roughly the same as it was almost twenty years ago.<sup>17</sup> A study conducted by the Pew Research Center, which compared survey responses on similar questionnaires from 1989 and from 2007, found that “the coaxial and digital revolutions and attendant changes in news audience behaviors have had little impact on how much Americans know about national and international affairs.”<sup>18</sup> Surprisingly, or not, similarly-educated Americans performed worse

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<sup>12</sup> Babcock & Bloom, *supra* note 7, at 42.

<sup>13</sup> *Graphical*, MERRIAM-WEBSTER DICTIONARY, <https://www.merriam-webster.com/dictionary/graphical> (last visited Dec. 10, 2016).

<sup>14</sup> Snow, *supra* note 11.

<sup>15</sup> *Infographic*, MERRIAM-WEBSTER DICTIONARY, <https://www.merriam-webster.com/dictionary/infographic> (last visited Dec. 10, 2016).

<sup>16</sup> See, e.g., Koh, *supra* note 9; Christina Hitrova, *Social Complexity in International Law and International Relations as a Complex Adaptive System*, [http://www.academia.edu/2464915/Social\\_Complexity\\_in\\_International\\_Law\\_and\\_International\\_Relations\\_as\\_a\\_Complex\\_Adaptive\\_System](http://www.academia.edu/2464915/Social_Complexity_in_International_Law_and_International_Relations_as_a_Complex_Adaptive_System) (last visited Dec. 10, 2016).

<sup>17</sup> *Public Knowledge of Current Affairs Little Changed by News and Information Revolutions*, PEW RESEARCH CTR. (Apr. 15, 2007), <http://www.people-press.org/2007/04/15/public-knowledge-of-current-affairs-little-changed-by-news-and-information-revolutions>.

<sup>18</sup> *Id.*

across the board in 2007 than they did comparatively in 1989.<sup>19</sup> And one subject about which Americans seem to have less information than two decades ago is international affairs. For instance, in 1989, when the original Pew survey was conducted, 81% of Americans were able to exhibit some knowledge about the trade deficit between the United States and other countries, but only 68% knew about this aspect of international relations in the 2007 survey.<sup>20</sup> In 1989, 47% of respondents could identify the president of Russia, but nearly twenty years later only 36% could correctly answer the same, updated question. Obviously, the public's comprehension of international relations could benefit from the aid that graphical models like Core Visualization can provide, which is especially essential when those relations involve conflict on any scale or the likely possibility of violent intervention.

### C. Using Visualizations to Illuminate International Conflict Analyses

As visualization of this sort is especially effective at communicating complex ideas,<sup>21</sup> and the analysis of international conflicts can be quite, even quintessentially, complex,<sup>22</sup> then it stands to reason that graphical models can be helpful in understanding how differing states interact on the global scale. Indeed, this model would not be the first to utilize spheres to better comprehend state power. A concept known as the “sphere of influence” has been used to describe both the physical and conceptual control that a state may exert.

Sphere of influence, in international politics, [is] the claim by a state to exclusive or predominant control over a foreign area or territory. The term may refer to a political claim to exclusive control, which other nations may or may not recognize as a matter of fact, or it may refer to a legal agreement by which another state or states pledge themselves to refrain from interference within the sphere of influence.<sup>23</sup>

The Core Visualization model seeks to similarly integrate state influence, but to also combine those concepts with philosophical principles regarding the legitimacy of governmental action and

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<sup>19</sup> *Id.*

<sup>20</sup> *Id.*

<sup>23</sup> *Sp.*

visit

Influ

10, 2010).

ENCYCLOPEDIA BRITANNICA, <https://www.britannica.com/topic/s>

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