

The Simple Geometry of Peace

Carlos E. Puente

University of California, Davis

Abstract. The last few decades have witnessed the development of a host of ideas aimed at understanding and predicting nature's ever present complexity, including the one induced by the power of the air. This poster explains how the notion of multiplicative cascades, as used to accurately model fully developed turbulence, provides a suitable framework for visualizing the dynamics and consequences of mankind's ever present divisive traits, comprising our historical propensity to violence and the pervasive wealth inequalities and poverty present in the world today. It is argued that we may learn from the simple repetitive ways of turbulence in order to avoid the ultimately deadly consequences of corruption and greed; for it is shown that all power-law Pareto distributions, describing inequalities within and among nations, share the same dissipation implicit in the power-law Richardson distribution of wars and in all of nature's divisive distributions, such as those in earthquakes and avalanches, that are suitably named "devil's staircases." Via a rich imagery it is illustrated that the ancient maxims "cutting the mountains and filling the valleys" and "love one another" indeed qualify the only economical solution regarding peace for all, which may also be described by the geometric proverb "the hypotenuse of the pathway of peace."

The Breaking of Wholeness

Multiplicative cascades may be used to study fragmentation. Let's review.

A chain of imbalances:



repeat on each piece

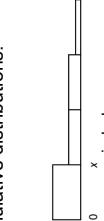
again with same proportions

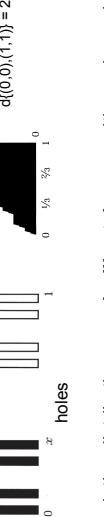
after few levels there are many "thorns" arranged by layers

cut a uniform bar by the middle

mold pieces leaving a hole

process generates equal thorns that emanate from dust



Cumulative distributions: 
Cumulative number of Events
Magnitude

- The two cascades are intimately related: varying the hole size yields the structure of all layers on the multifractal given by the chain of imbalances.

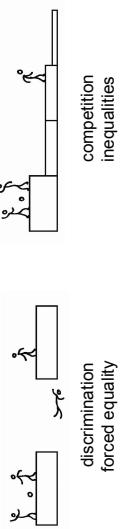
The Ruler of the Air and of the World

The cascade of imbalances is related to natural turbulence:

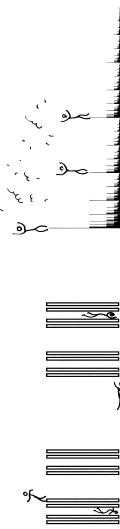
eddies, shaped as negative spirals running from + to - and carrying 70 and 30% of the energy, form a cascade until **dissipation**

$2/3 = 0.666\dots$

Cascades help us visualize the world's political systems:

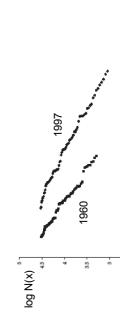
discrimination forced equality 

This is no joke for dissipation happens:

walls of distrust collapse 

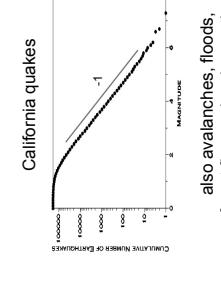
a warning to reigning system: $\rho = 0.7$ and $n = 20$ levels is a close fit to inequalities in USA

Cascades may fit the skewed Pareto distributions in the world:

a simple "line" in log-log: 30 to 85 percentile worldwide 

2/3 in poverty today

it is easier for a camel to pass by the eye of a needle:



The Unique and Faithful Solution

Common sense suggests reversing the cascade:

positive spirals of love, unnaturally running from - to +, defeat selfishness to mend equilibrium and unity and to maintain essential energies

$1 = 0.999\dots$

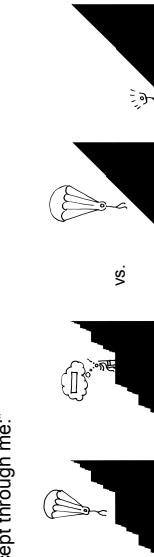
This is also found from "cutting the mountains and filling the valleys."

$Y = X$ mass from 0 to X
 $d((0,0),(1,1)) = 2^{1/2}$
straight ramp

Such simple geometry symbolizes **Jesus Christ**, the salvation of God.

The **Hypotenuse**, without **dust and thorns**, is the **pathway of peace**.

In the simple equation $Y = X$ we may see Jesus' silhouette in the cross.
 $"I am the way, the truth and the life and no one comes to the Father except through me."$



a veritable deception
arriving at the Origin

There is darkness from 6 to 9 as in the eclipse at Jesus' crucifixion.

It is easier for a camel to pass by the eye of a needle:

equilibrium is just an improbable point within a sea of probabilities and hence it is easy to be **hypocritical**

As turbulence and violence result in power-laws, it is best to exercise the unitive power of selflessness and **love one another**, for $1 = 0.999\dots$

Conversion, towards the perfection of zero sin, is also key for $x^0 = 1$.
References:
Please visit <http://puente.lawr.ucdavis.edu/peace.htm>