



# NEEDS AND DECISIONS IN GHETTO

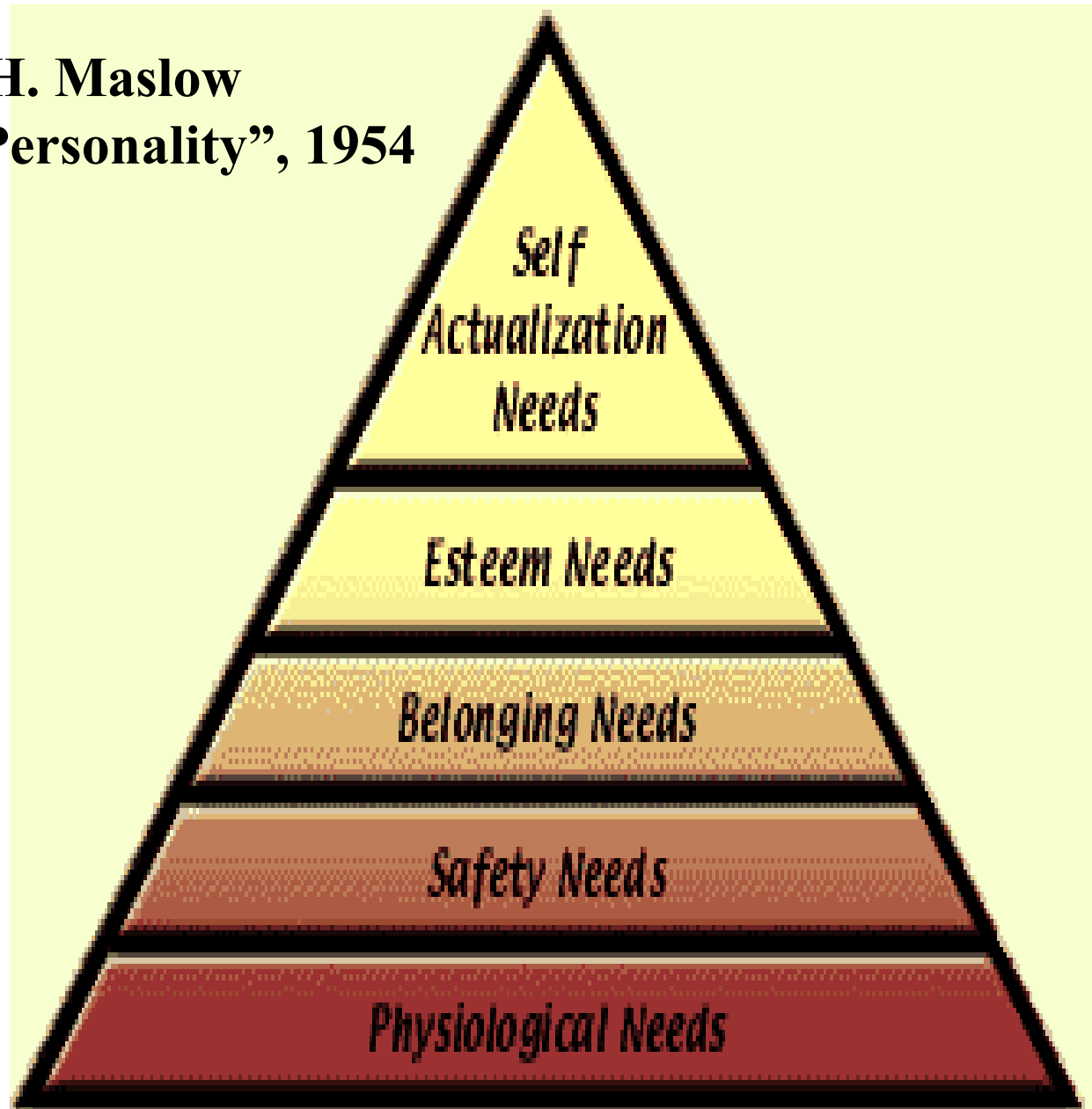
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**Poland**

*overview*

- 1. MASLOW THEORY OF NEEDS**
- 2. FROM AN ISSUE TO THE DECISION TREE**
- 3. WHAT I MEAN BY 'GHETTO'**
- 4. ISSUE OF RESISTANCE**
- 5. THE SAFETY LEVEL**
- 6. MEAN FIELD APPROACH**

**Abraham H. Maslow**

**„Motivation and Personality”, 1954**



## Example of satisfaction of needs:

10 %

Self-actualization needs:  
Realization of Potential

Maslow's Hierarchy

Cognitive Needs:  
Knowledge and  
Understanding

Aesthetic needs:  
Order and Beauty

50 %

Belongingness  
and Love needs

Esteem Needs:  
Achievement

40 %

85 %

Physiological  
needs

Safety and  
Security  
needs

70 %

Lower needs must be satisfied first.



Two conjectures:

$$\text{satisfaction} / \text{effort} = \text{payoff} < 1$$

$$\text{effort at level } (n+1) = \text{satisfaction at level } (n)$$

Then in our previous example of satisfactions (85%, 70%, 50 %, 40%, 10%) the **payoffs** are:

0.85 (physiology)

15% of effort lost

0.7 / 0.85=0.82 (safety)

0.18\*0.85=15% of effort lost

0.5 / 0.7=0.71 (belongingness)

0.29\*0.7 =20% of effort lost

0.4 / 0.5=0.80 (esteem)

0.20\*0.5 =10% of effort lost

0.1 / 0.4=0.25 (self-actualization) remaining 40% of effort

provided that all that remains of effort has been made at all levels.

**We know WHAT people do. Now, HOW they do it?**

For a given issue, we can construct the **decision tree**:

how individual needs are translated to decisions about the **issue**?

Example: **issue of conformism** (*practice of "going along and getting along" with people who appear to be more powerful*).

The quest should be: in given conditions (payoffs),  
how people struggle for satisfaction of their needs?  
How their efforts are coherent with our **issue**?

Can one get: **safety** being a conformist ?

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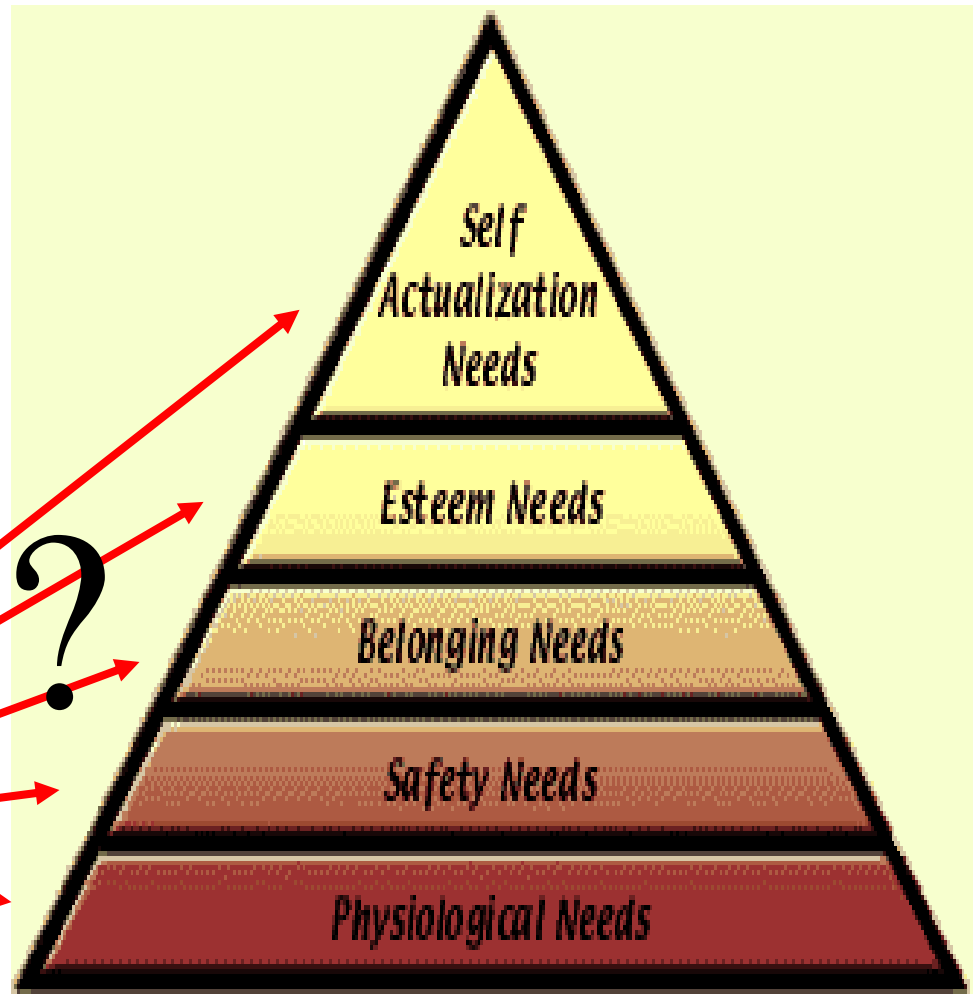
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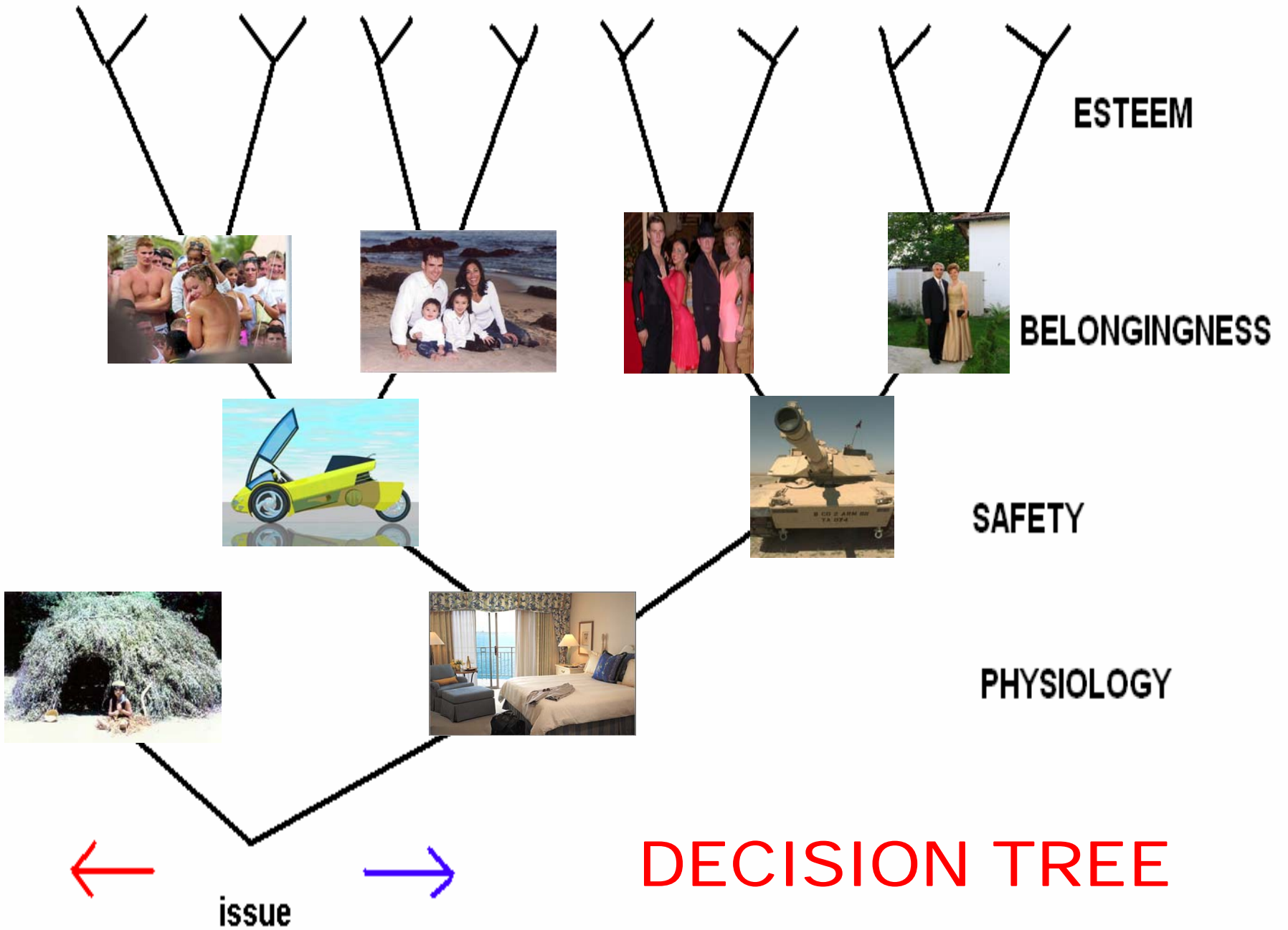
Can one get: **esteem** being a conformist ?



Or: **will**  
**people be**  
**conformists**  
**when**  
**struggling**  
**for:**



**taking given values of payoffs into account**





## **WHAT I MEAN BY 'GHETTO':**

**1. an attempt of an inhabitant of ghetto to leave the area makes his situation worse,**

**2. human laws, as understood by inhabitants, are broken by an external power.**



Guatemala?



Soweto



Riga?



Lodz



Sarajevo



Baghdad



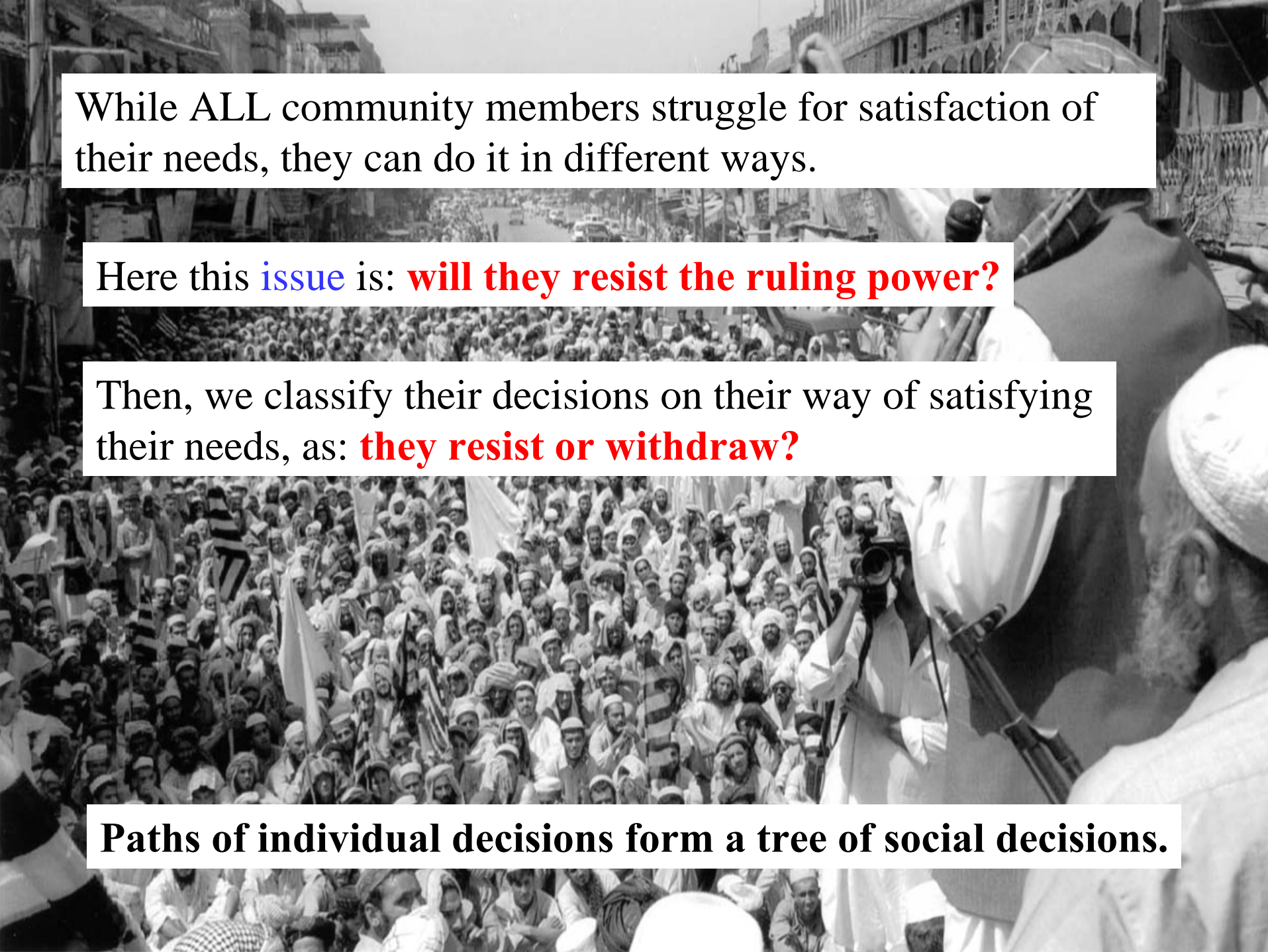
Grozny



Marseille?



Ramallah



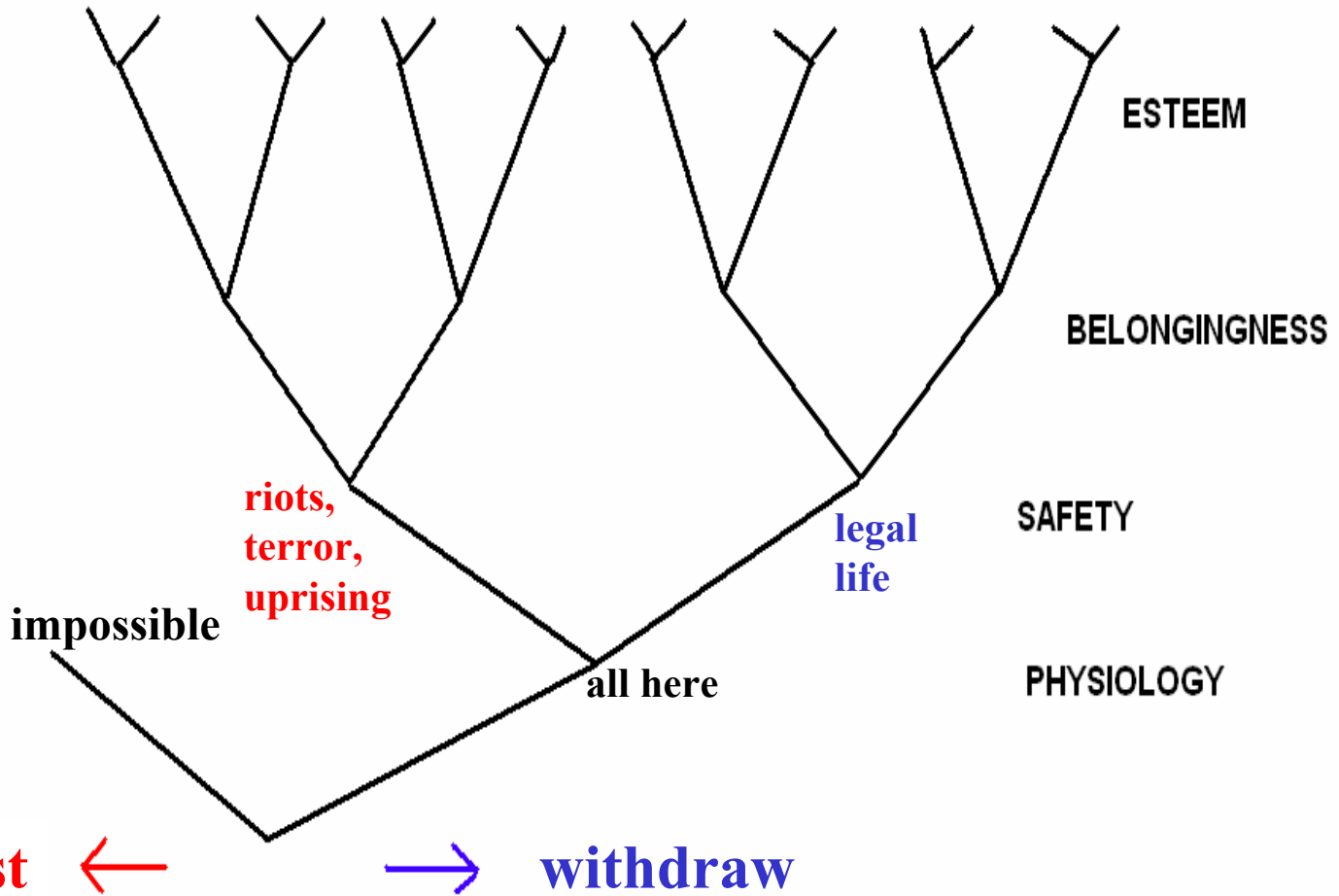
While ALL community members struggle for satisfaction of their needs, they can do it in different ways.

Here this **issue** is: **will they resist the ruling power?**

Then, we classify their decisions on their way of satisfying their needs, as: **they resist or withdraw?**

**Paths of individual decisions form a tree of social decisions.**

# The issue of resistance in ghetto.





**SAFETY**

**PHYSIOLOGY**



**SAFETY**

**PHYSIOLOGY**



**EFFORT=X**  
**PAYOFF=Y**  
**SATISFACTION=XY<X**

**EFFORT=X**  
**PAYOFF=Z**  
**SATISFACTION=XZ<X**

**SAFETY**

**PHYSIOLOGY**

**EFFORT = 1**  
**PAYOFF = X**  
**SATISFACTION = X**

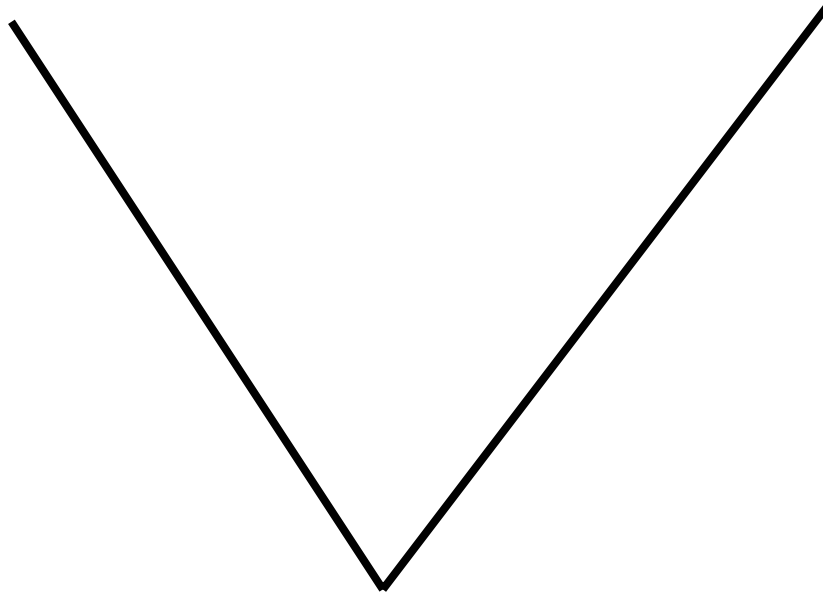
**The question is:  $Y < Z$  ?**

Another question: do people know on the payoffs?

# MAGNETIC ANALOGY

**Resist (R) = spin up**

**Withdraw (W) = spin down**

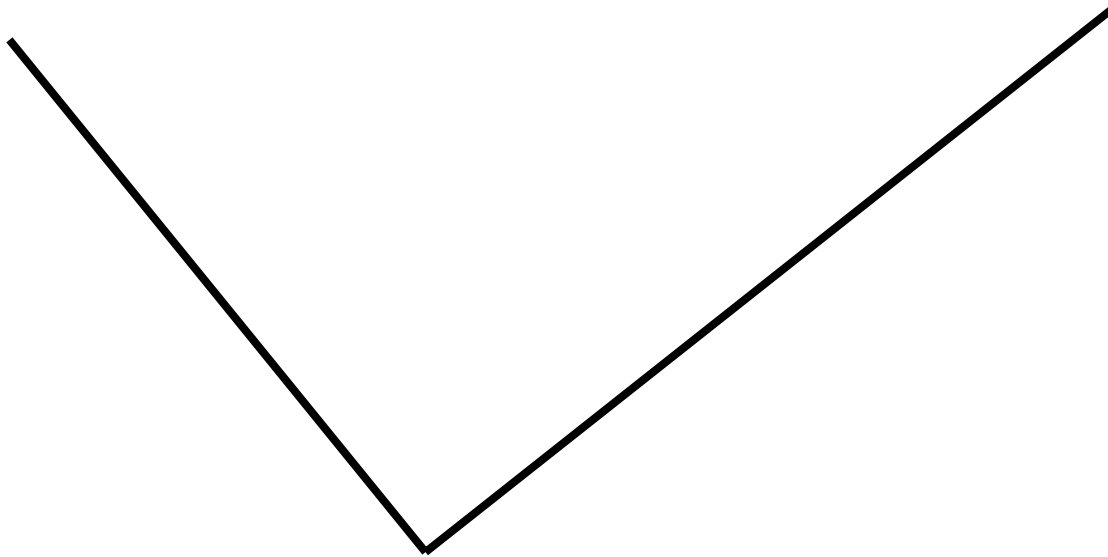


**Lack of information about the actual decisions at social scale  
= temperature T**

# MEAN FIELD APPROACH

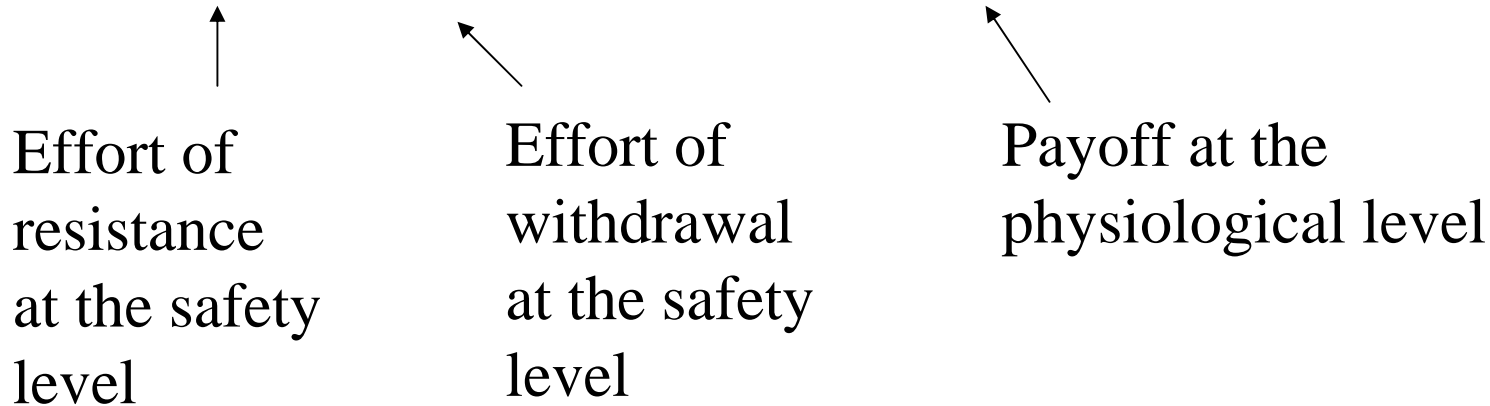
Effort(R)  $\propto$  payoff(R)  
 $\propto$  **number of resistants**

Effort(W)  $\propto$  payoff(W)  
 $\propto$  **number of withdrawn**



Essence of the phase transition: **POSITIVE FEEDBACK**

$$\mathbf{Effort(R) + Effort(W) = Payoff}$$



$$\mathbf{Effort(R) - Effort(W) \equiv m \Rightarrow Effort(R,W) = (Payoff \pm m)/2}$$

$$\mathbf{dm/dt = (Payoff - m) w(W \rightarrow R) - (Payoff + m) w(R \rightarrow W)}$$

where  $w(W \rightarrow R) = \exp(m/T)$  **(mean field theory)**

$$\frac{dm}{dt} = Payoff * \sinh(m/T) - m \cosh(m/T)$$

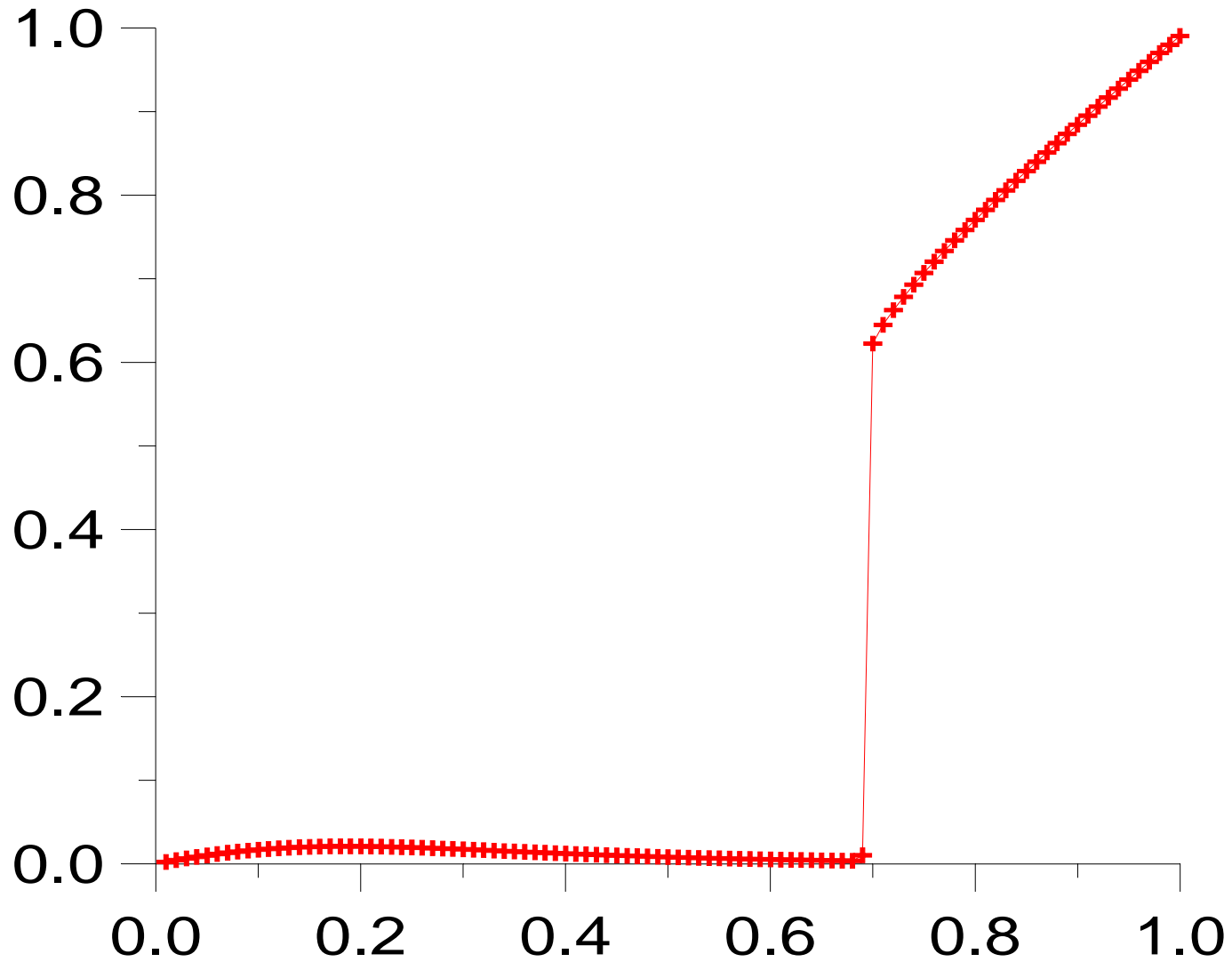
**Question: how to reduce the resistance?**

**Two solutions:**

**A. Provide safety for the inhabitants (it cannot be done by army). Then the payoff of the resistance fighters is much less than the payoff of the others.**

**B. Reduce the payoff at the physiological level (this can be done by army). Then the whole population is concentrated on their physiological needs: food, water, medical treatment.**

## effort at resistance at the safety level



payoff at the physiological level

**SAFETY**



**PHYSIOLOGY**

# CONCLUSION



ONCE THE SAFETY IS INVADED,  
A COMPLEX MACHINE OF SOCIETY IS  
TRANSFORMED INTO A SIMPLE  
RESISTANT MEDIUM





# Thanks to

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- Dietrich Stauffer for criticism (the only conscious)

# More details in

K.Kułakowski, physics/0512058 ;Int. J. Mod. Phys. C17 (2006) 287