The Global and the Local in Mobile Communication

Places, Images, People, Connections

Welfare and Warfare

Contrasting scenarios of mobile communication

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Outline of the presentation

Invitation to a mental journey

Dealing with two essential functions of the modern state: warfare and welfare

illustration of the potential of communications technologies for qualitative change.

Part I: Short history of **warfare**

Part II: **welfare** and its future

By changing some aspects of the welfare state we will come back to the question of war again.
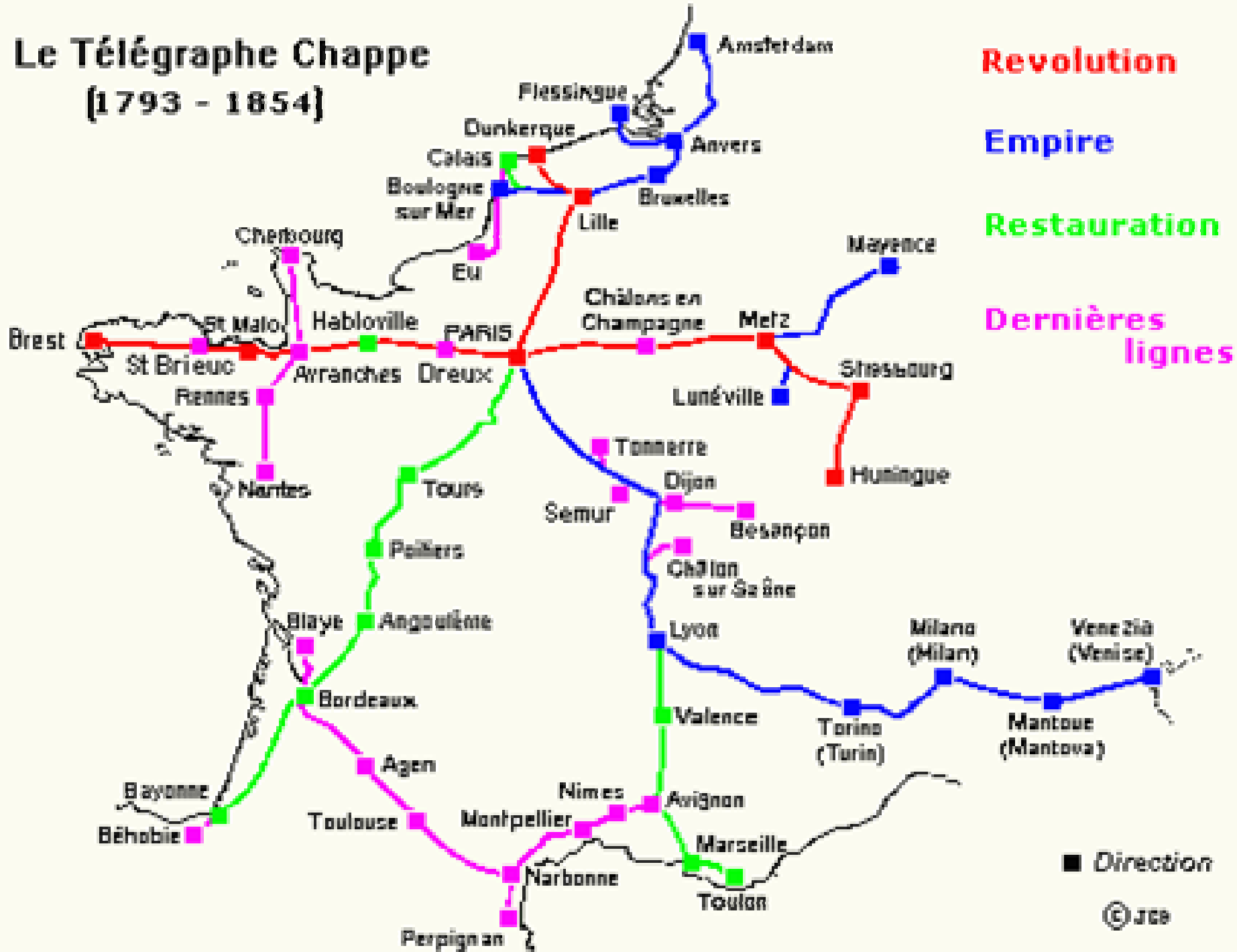
Stages of development

- 1792: Optical telegraph – separation of strategic command and battlefield
- 1870: Electric Telegraph – war by railway
- WW I: Wired telephony – positional war
- 1939: Mobile communication – Blitzkrieg
- 2000+: Ubiquitous communication – swarming

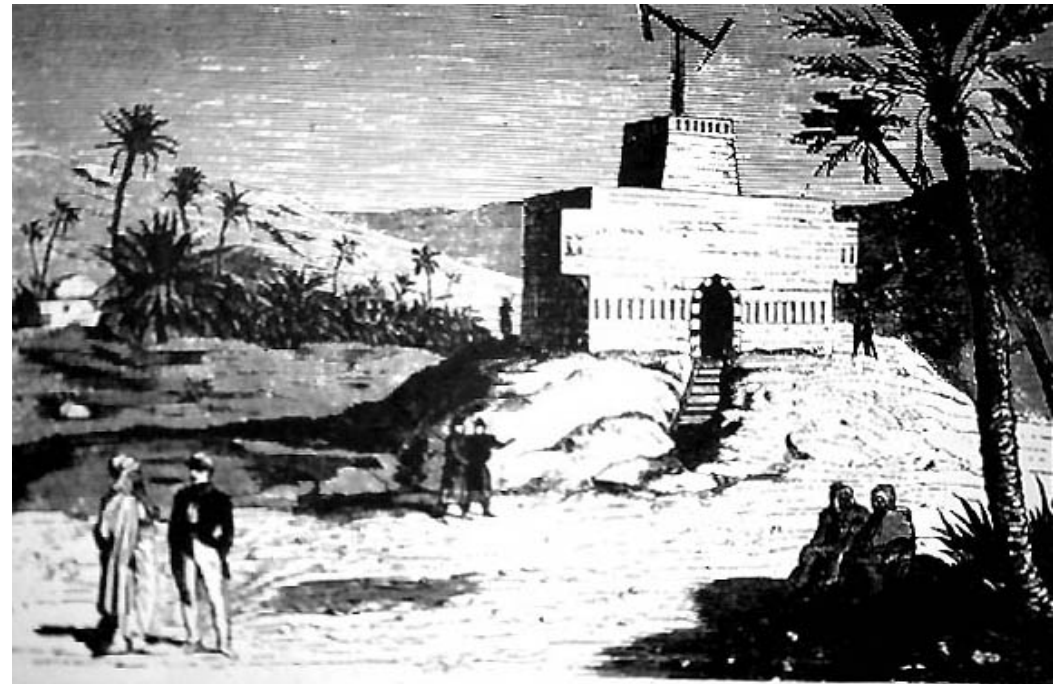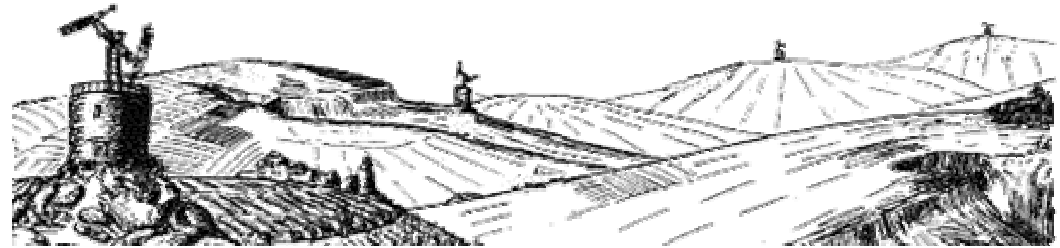# *Optical telegraph – separation of strategic command and battlefield*

- Invented by Claude Chappe (1763-1805), assisted by his brothers
- 1792 first implementation Paris-Lille
- Stations in visible distance, equipped with semaphore and telescope
- Finally arranged around 5 main lines starting in Paris, not connected in the centre
  - to Lille with an extension to Amsterdam; to Strasbourg via Metz, extension to Mainz; to Brest; to Dijon with an extension to Venice; to Bordeaux.
- Speeded up mobilization, co-ordinated movements of armies, warned about invasion

Le Télégraphe Chappe
(1793 - 1854)

Revolution
Empire
Restauration
Dernières lignes

■ Direction

© JCB

Amsterdam
Flessingue
Dunkerque
Calais
Anvers
Boulogne sur Mer
Bruxelles
Lille
Eu
Mayence
Cherbourg
Châlons en Champagne
Metz
Brest
St Malo
Habloville
PARIS
Strasbourg
St Brieuc
Avranches
Dreux
Lunéville
Rennes
Huningue
Nantes
Tonnerre
Tours
Dijon
Semur
Besançon
Poitiers
Châlon sur Saône
Blaye
Angoulême
Lyon
Milano (Milan)
Venezia (Venise)
Valence
Torino (Turin)
Mantoue (Mantova)
Bordeaux
Agen
Nimes
Avignon
Bayonne
Montpellier
Toulouse
Marseille
Béhobie
Narbonne
Toulon
Perpignan

Chappe's Optical Telegraph

Chappe's optical telegraph was used longest in North Africa, where it was not replaced by the electrical telegraph until 1859. Here, an installation in Algeria.

Electric telegraph –
war by railway

- Form Franco-Prussian War (1870-71) to WW I
- Parallel to the building up of rail networks in Europe
- Combination of new means of transport and means of communication allowed
  - precise planning, timing and coordination
  - reduction of frictions in mobilization and deployment,
  - improved stand-by features (armies could wait in longer distance)
  - short term relocation of armies
  - rapid reactions

Electric telegraph
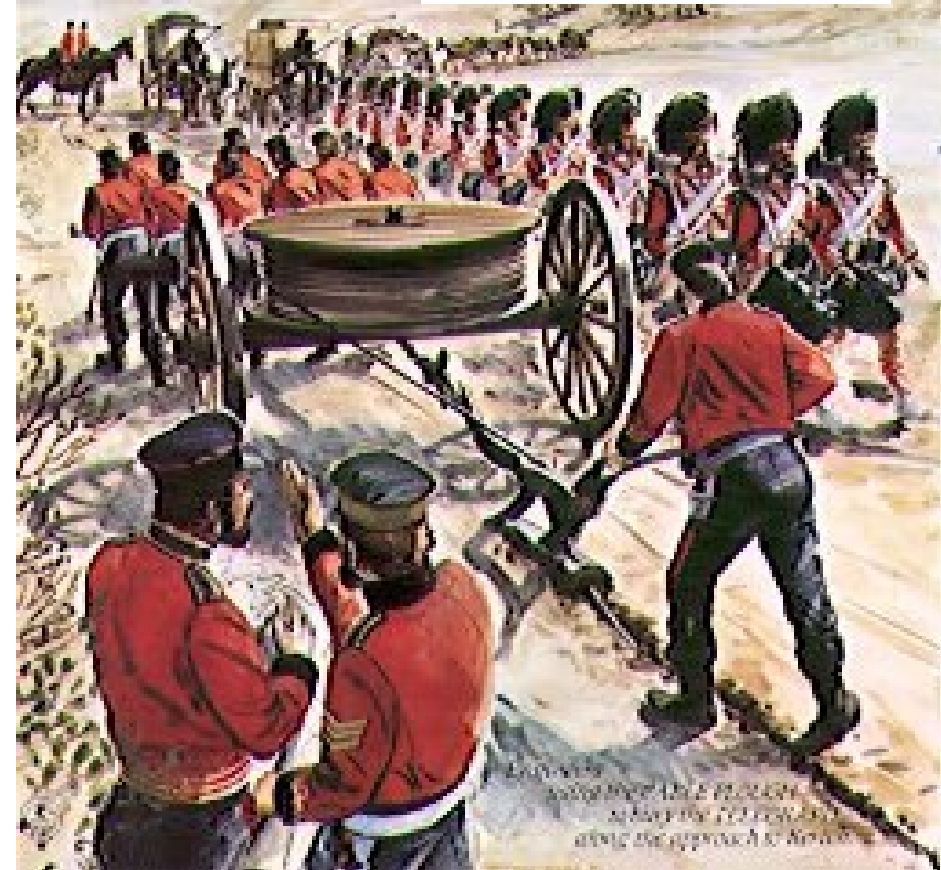
Wired telephony – positional war

- During the positional war of WW I
- In the beginning used like telegraph
- Interactivity was discovered only slowly
- Topology of multiple connections
- Use of telephones in local networks
  - Between artillery and guns
  - Between observers and artillery
  - In air defence systems

The wired telephone

Americans in the trenches on the Marne front. The outlook has seen the signal rocket and is telephoning to the artillery trenches instructions to cover the forward line with barrage to protect them across "No Man's Land." Photo shows operator receiving instructions by telephone and crew awaiting orders.

Mobile communication - Blitzkrieg

- Going wireless: a "heavy" start
  - Germany 1914: first mobile station: 1.5 tons
- 1937 Germany: VHF-radio-receivers for each tank, transmitters for each command tank, also used in aircraft
- Strategic advantages
  - The commander back to the battlefield modern version of the cavalry
  - Coordinated action of tanks, aircraft and infantry
  - Direct interaction with High Command from the battlefield

Ongoing Developments

- After the implosion of socialism construction of new enemies of „Western Civilization"
  - Until 2000: „Rogue states"
  - After 2000: „States of concern":

    North Korea, Cuba, Iran, Iraq, Libya*, Syria, and Sudan
  - After 9/11 2001: „axis of evil" seen as homelands of terrorism:

    Iraq, Iran, and North Korea
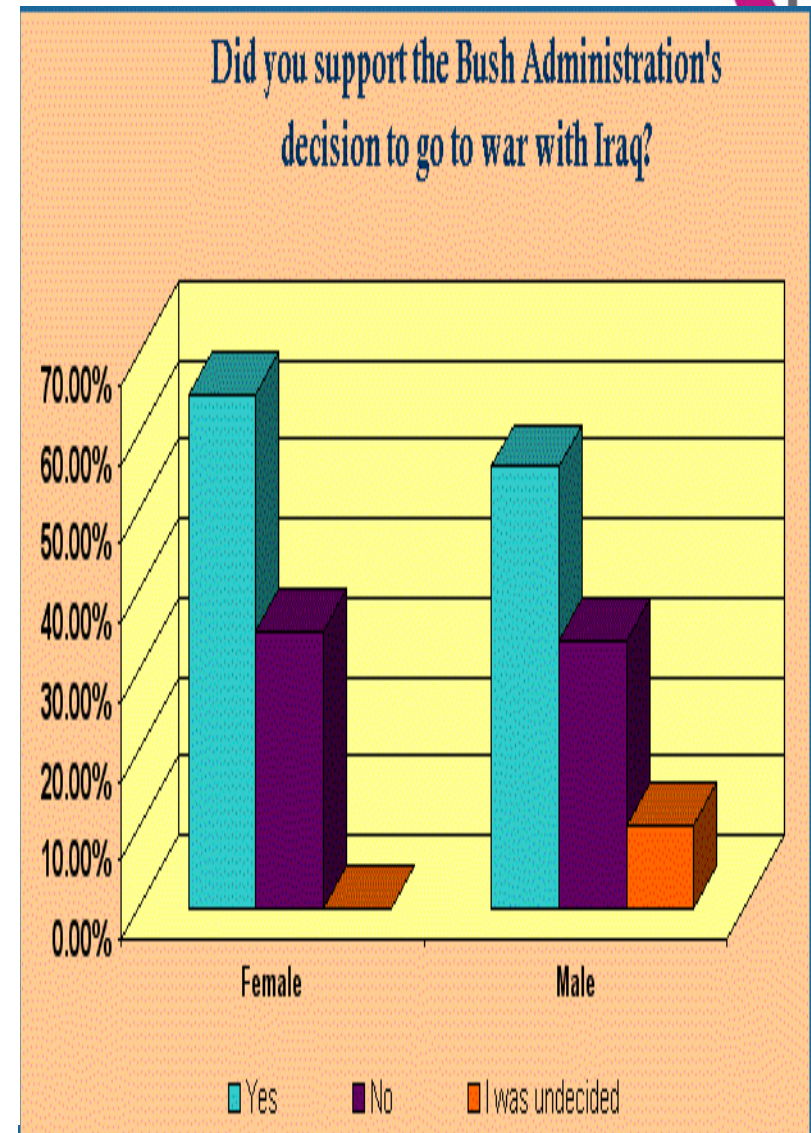
* recently taken off the list

Blitzkrieg strategy copied by other countries:

- Israel against Egypt, Jordan and Syria 1967 (six-day war)
- Gulf War 1991
- United States in Afghanistan (October - December 2001)
- Iraq War 2003 ("Shock and Awe")

Combination of highest level of arms and computers/ communication technologies

Recent history is teaching us:

It seems possible to win the war, but usually peace is lost.

Did you support the Bush Administration's decision to go to war with Iraq?

Female / Male

- Yes
- No
- I was undecided

Is there a way out?

Swarming

Cue taken from nature

Bees do "humming"

- instinctively move in coordinated synchronous behaviour in pursuit of food.

and "blanketing"

- striking at their enemies from all directions.

Ants

- employ swarming in immediate defence of the hive/in extended territorial wars against other ants.

show "sustainable pulsing" of forces

- unlike bees who die after they have stung they can attack repeatedly.

SEPT 2001

bees….

…and ants

Photo Courtesy of:
Fidelity Exterminating Company
Aberdeen, MD

http://www.unexco.com/gallery/swarmers.jpg

Assessment of military doctrines

- Believers in traditional warfare
- View of the Founding Fathers
- View of "Old Europe"
- An economists view: opportunity costs

WASHINGTON AND HIS CABINET

The (opportunity) cost of war

Country (2002)	Military Budget	GDP	Percentage share
	Billions of Dollars	Billions of Dollars	%
United States	399,1	10383,100	3,84
Russian Fed. (2001)	65,0	346,520	18,76
China (2001)	47,0	1266,052	3,71
Japan	42,6	3993,433	1,07
UK	38,4	1566,283	2,45
France	29,5	1431,278	2,06
Germany	24,9	1984,095	1,25

Part 2: Beat Swords into ploughshares

"They shall beat their swords into ploughshares, and their spears into pruning-hooks; nation shall not lift up sword against nation, neither shall they learn war any more".

Prophet Isaiah, 2500 years ago

Beat Swords into ploughshares - modern version

"Every gun that is made, every warship launched, every rocket fired, signifies in the final sense a theft from those who hunger and are not fed, those who are cold and are not clothed".

President Dwight D. Eisenhower, 50 years ago

The cost of the European welfare state up to 2010

Expenditure	Shares of GDP
• Pensions and old age	5 - 13%
• Health Care	7 - 11%
• Education	5 - 8%
• Unemployment support	3 - 5%
• Active employmt policy	0.4 - 3.2%
Total range	**20.4 - 40.2%**

Crisis factors

- Demographic factors
  - declining fertility rates
  - longer life expectancy
  - demographic pyramids convert to rectangles
- Economic factors
  - increasing costs and reduced economic growth rates
  - Increased income levels
  - Chronically high unemployment - less solidarity
- Political factors and public discourse
  - Decline of political movements defending the traditional welfare state
  - Decline of traditional grand narratives
- Societal and institutional factors
  - Mosaic society; singles households increase
  - over-bureaucratization

Is there a way out?

New possibilities come up by new technologies and new societal trends

ICTs allow reduction of transaction costs

=>New forms of organizations can emerge

> ➢ Hierarchy levels can become less
> ➢ Responsibility back to people
> ➢ But: services of the welfare state continue to be a right of the citizen

Look for examples already in place

Average Transistor Price By Year

Source: Dataquest/Intel 12/02

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Empirical examples ("Keimzellen")

- "Peer Group Care"
  - complementary structure for the elderly, poor, disabled and other outsiders;

- "Study Circles"
  - to complement traditional schools;

- "Workers' Health Assurance Groups"
  - to improve the occupational ill-health status, and

- "Intrapreneurial Groups"
  - against alienation on the workplace are examples to illustrate how

Empirical examples ("Keimzellen")

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  - complementary structure to take care for the elderly, poor, disabled and other outsiders;
- "Study Circles"
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- "Workers' Health Assurance Groups"
  - to improve the occupational ill-health status, and
- "Intrapreneurial Groups"
  - against alienation on the workplace and to gain responsibility

Challenges of Implementation

- welfare functions should be complemented by TINs, not replaced

- Society's responsibility should not be taken away, but increased (in particular financial resources should be available, private–public partnerships, involvement of of NGOs needed)

- Important issue: how to monitor and control the TINs to create a process of self-improvement

- Experiencing directly the darker side of life can lead to more effective political engagement

Conclusion

Kant's expectation behind his request in „To eternal peace" (1795)

„Die bürgerliche Verfassung in jedem Staat soll republikanisch sein!"

Countries with autocratic system will not ban war, but countries with a republican constitution are able to do so

But, as recent history shows: Kant was not right!

! Modify the living conditions in such a way that Kant's expectation becomes true !
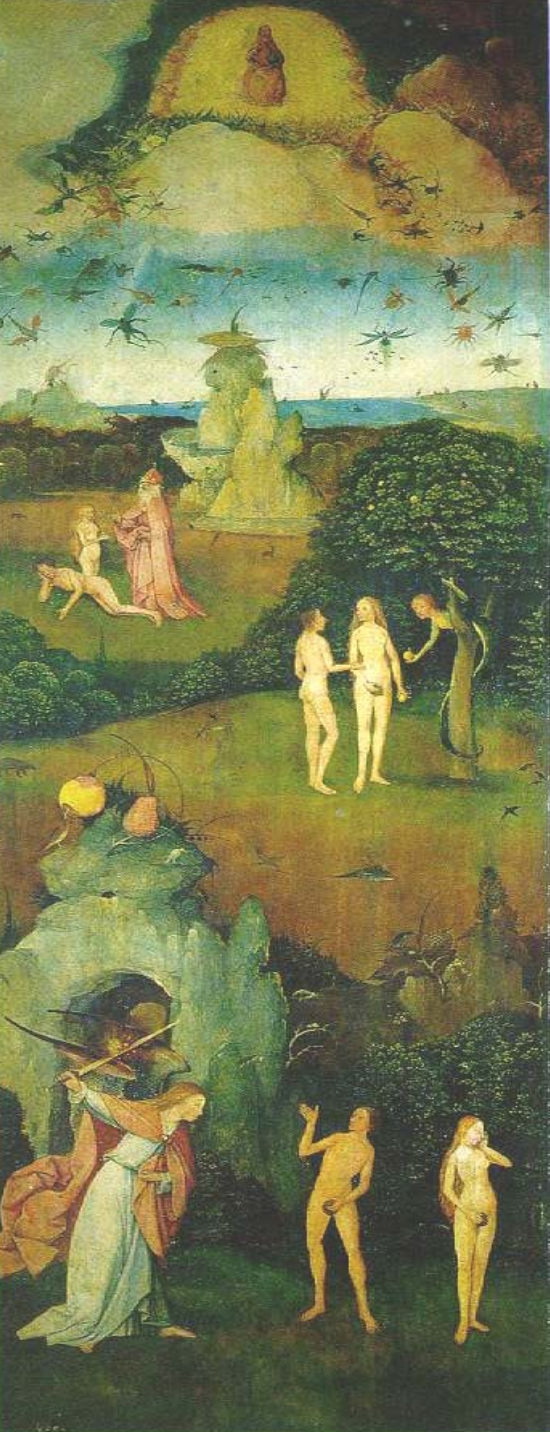
It's up to us to find the *appropriate* way!

Thank you for your attention!

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