

**The Memorial Site for the
Fallen Soldiers of the Signal,
Electronics and Computers
Corps**



Ministry of Communications;
Spectrum management

The Electromagnetic Spectrum Management and Challenges

איך גאוגרפיה ותרבות משפיעות על ניהול התדרים ברמה העולמית, האזורית והארצית
יהוד, 12 מרץ 2013

How Geography and Culture influence the RF
Spectrum Management; Yahud, 12 March 2013

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The lecture is dedicated to Ziva (Halevi) Arbel, born in Edirne, died in 3131/12 /; the first signal corps officer, “ther girl with gun” and “the girl with jar ”

Based on the PhD thesis :

An analysis of regulatory frameworks for wireless communications, societal concerns and risk: the case of Radio Frequency (RF) allocation and licensing

How Geography and Culture influence the RF Spectrum; see the book of the thesis

<http://www.universal-publishers.com/book.php?method=ISBN&book=1599427109>

How Geography influences RF Spectrum Management

1. Geography influences the allocation and licensing of the radio frequency (RF) spectrum in different nations
2. Longitude of a country to a fair extent defines RF allocation: see slide 15, the 3 ITU Regions, with different allocations. Africa and West Asia follow Europe, whereas the Americas approximate the US
3. The tropics are limited in latitude between 23.5° N and 23.5° S
4. Wealth of Nations, RF regulation and risk tolerability differ between tropical and non-tropical climates
5. Latitude influences the origin of colonialism: UK and France influence US and Canada, Australia and New Zealand; Spain and Portugal influence Latin America
6. Slide 8 depicts TV analog: colonial and geopolitical influence

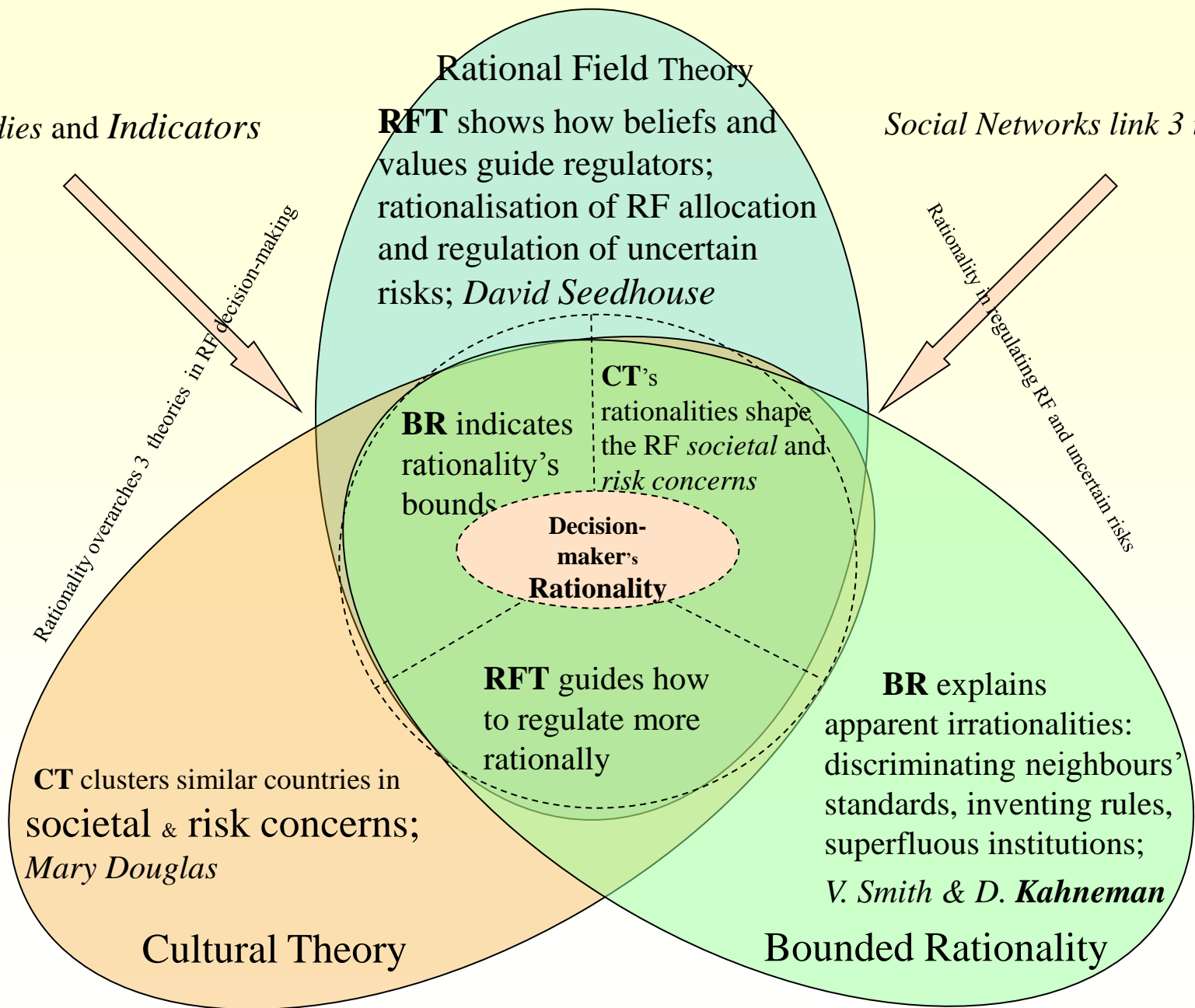
How Culture influences RF Spectrum Management (1); see slide 8

1. Culture is characterised by language, religion, tradition, inheritance, behavioural norms, discipline, obedience, sense of belonging, geopolitical influence, personal values, ethics, habits, attitude toward one's superiors and toward gender, arts, music, games, food (e.g. 'Halal', 'Kosher'), lifestyle, heredity, biological evolution (Smith 2002:529), genetics (Diener and Suh 1999:448), interpersonal trust and health
2. The language of a country is a significant indicator of its analogue TV standard. French speaking countries are influenced by France, English Speaking driving in the left by UK, English Speaking driving in the right by US
3. Sykes-Picot agreement (16 may 1916, divides the Mideast to UK and French spheres) defined UK influence in ISR and JOR and French in LBN, SYR and EGY

How Culture influences RF Spectrum (2); see slides 10 & 11

1. Attitudes to RF human hazards and spurious emissions levels reveal that the US, Canada and Japan are more tolerant than Europe. Australia, Canada, New Zealand, UK and US encourage technological innovation
2. Relation to the father and mother carves the position to the superior: boss (patron), commander, teacher and coach; city (pólis) and homeland
3. The collectivised/ centralised versus the individualised/ market-based rationalities result in different regulatory frameworks and contrasting societal and risk concerns
4. The success of the top-down European GSM and the bottom-up Wi-Fi standards reveal how the central-planning and market-based approaches have thrived

Case Studies and Indicators

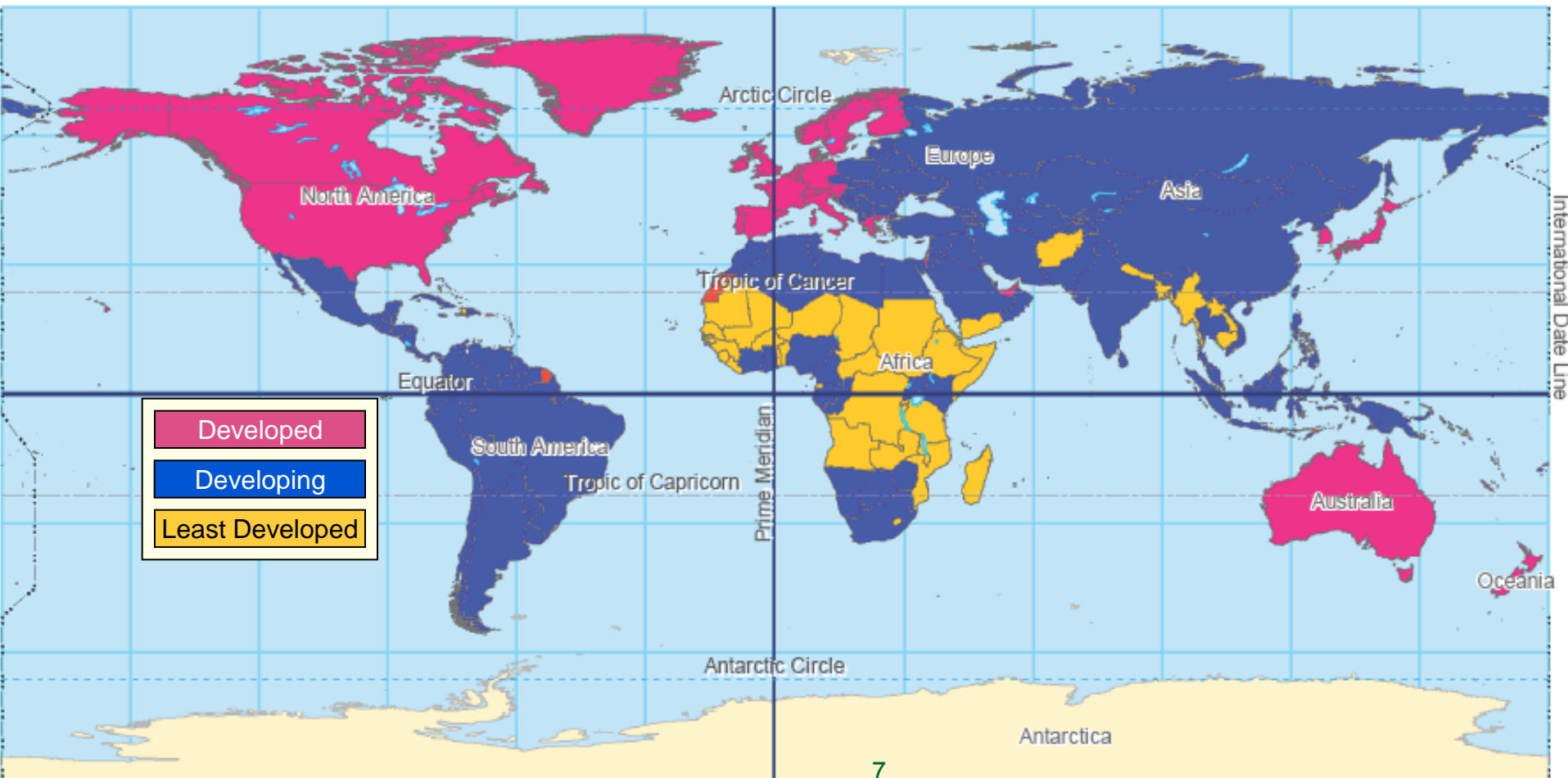


Three theories explore RF *societal and risk concerns* and explain the empirical results

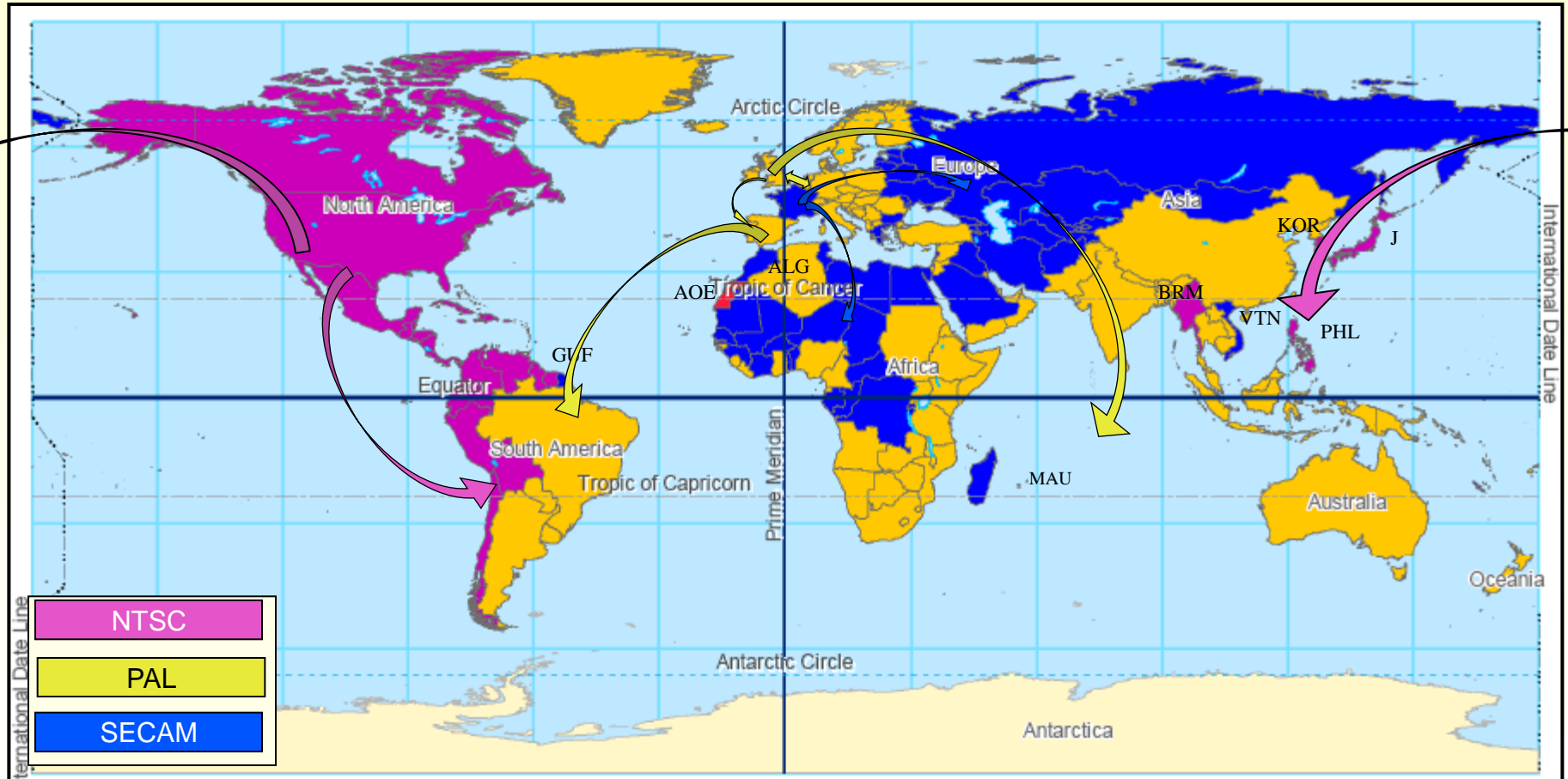
UN Development Status; *tropical underdevelopment*

Broad study of 235 countries ; detailed case studies of the UK, France, US and Ecuador
RF regulation and risk tolerability differ between tropical and non-tropical climates

Countries' longitude & latitude to a fair extent define RF allocation & standards

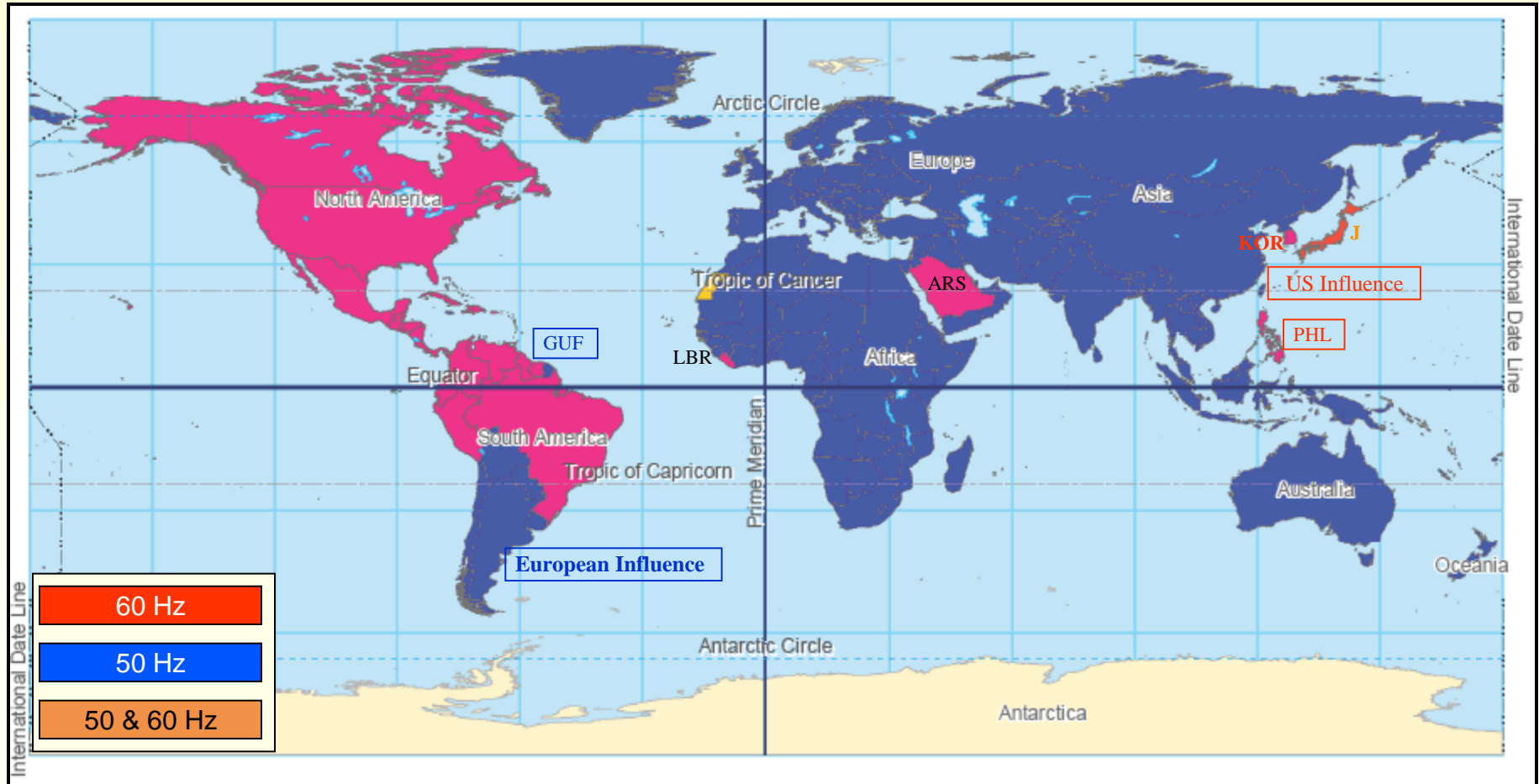


TV analog Colours: colonial & geopolitical influence

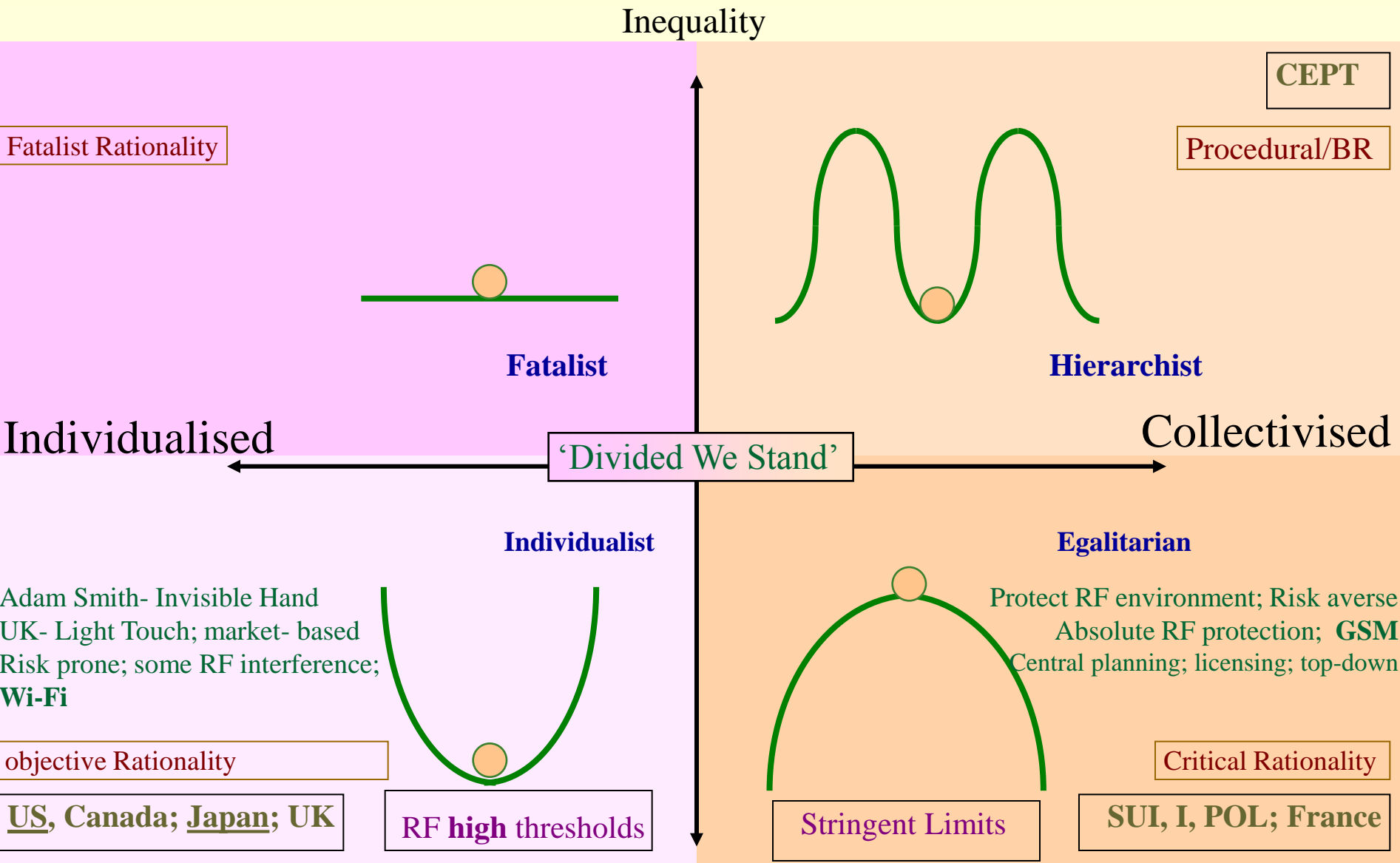


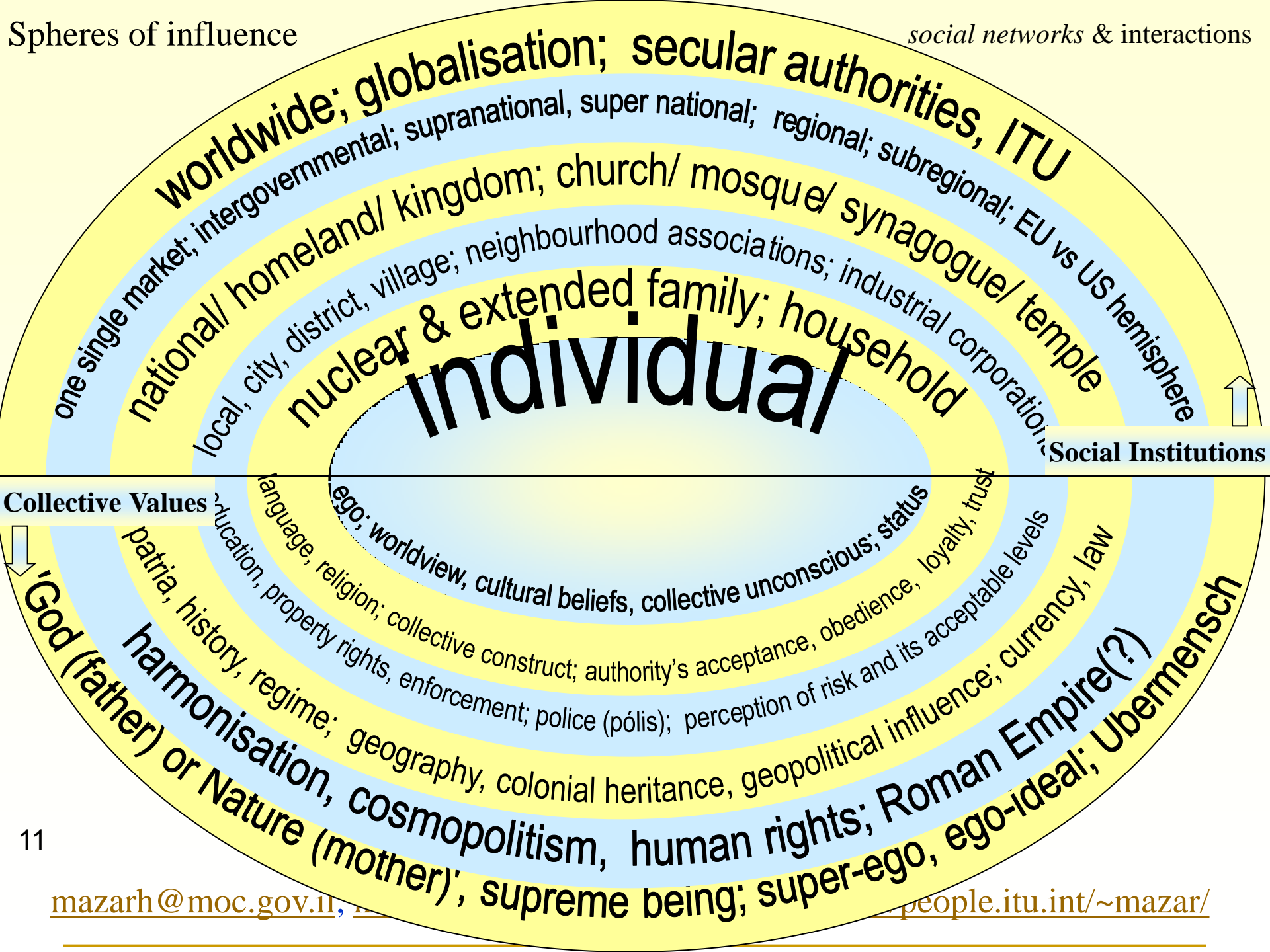
Electricity 50-60 Hz (*EU vs US*)

<http://www.worldstandards.eu/electricity.htm>



4 Perceptual Rationalities; EMF Human Hazards & Spurious Emissions





Is competition an aim or a tool?

(views of Haim Mazar, not necessarily MoC)

2000 & 2001 Eneon electricity crisis: California had a shortage of electricity caused by market manipulations: over competition?

Does competition justify :

1. **Terrestrial** digital TV?
2. Fixed **Wireless** Access ?
3. **Wireless** Internet Router?

Do we need in Israel 5 UMTS operators while

France: Orange, SFR, Bouygues Télécom & Free Télécom UK: Vodafone, Telefonica, Hutchison 3G and Everything Everywhere Verizon may buy Vodafone or merge with

Price is down; however service is also down.

To enforce site, equipment & RF sharing ?

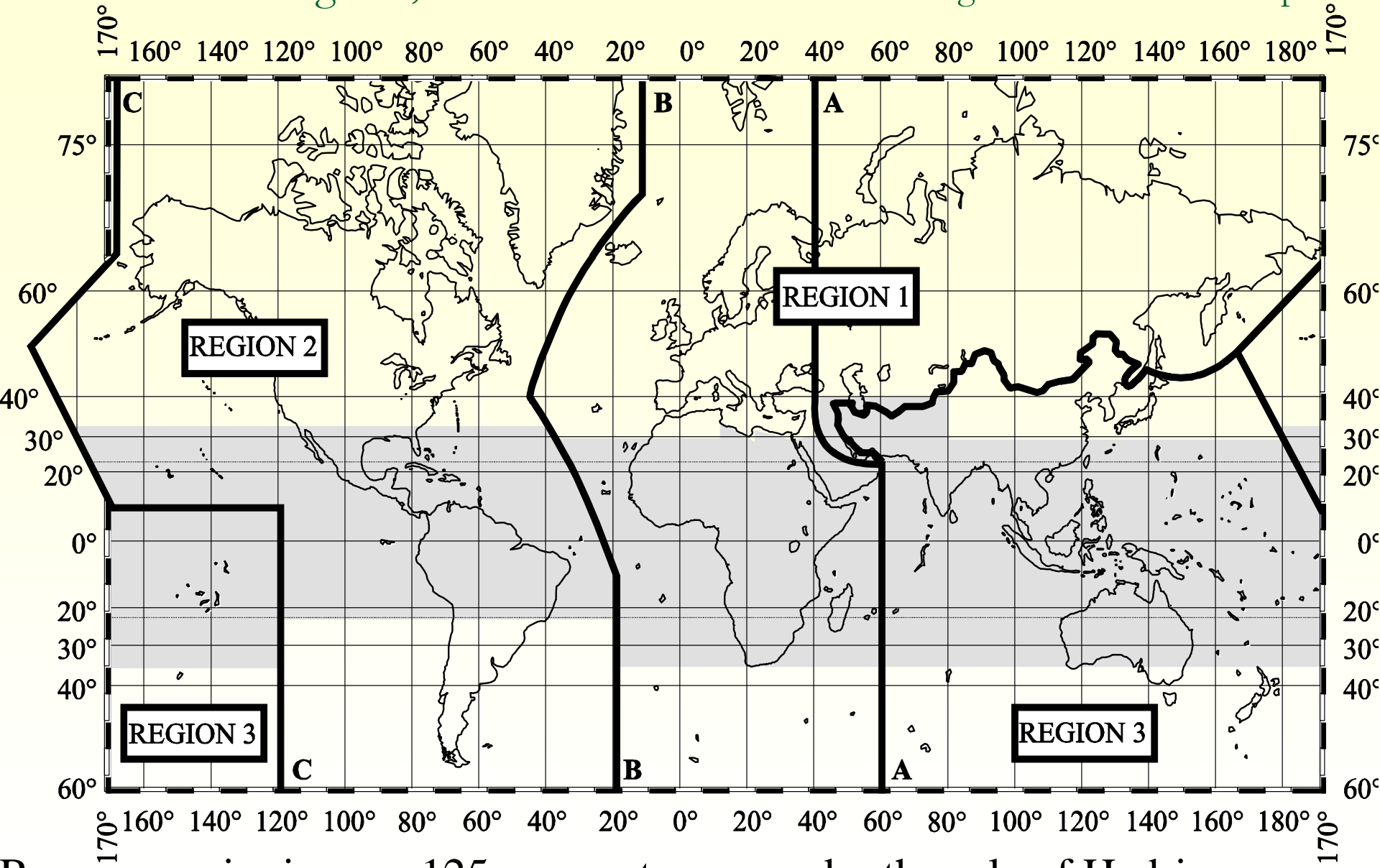
Values in RF Spectrum Management (1)

1. Will we follow central-planning or light touch
2. To whom belongs the RF. If it is to the country, RF trading is not allowed
3. Property: Bogota declaration, on 3 Dec 1976 the Equatorial countries have decided to proclaim and defend their sovereignty over this satellite geostationary natural resource
4. Fair-Play; “divided we stand”: not to disregard others. Where You Stand Is Where You Sit?

Values in RF Spectrum Management (2)

1. "Great minds think Alike" (Michaelian). Tolstoy first phrase in Anna Karenina "All happy families are alike; each unhappy family is unhappy in its own way. Between two points in planar geometry there is only one simple line, but indefinite ('irrational') curves
2. Wealthy countries are similar: WTO 1996: Any procedures... will be carried out in an **objective, timely, transparent & non-discriminatory** manner

Three ITU Regions; Latitude 40 is the limes between Regions 1 and 3 in Europe

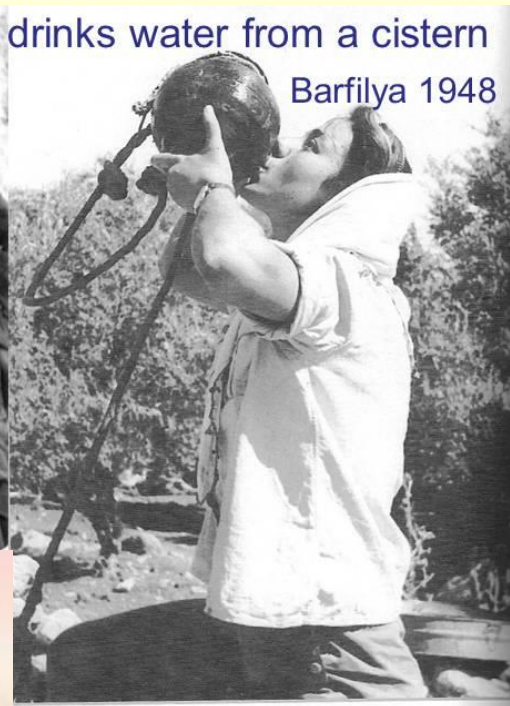
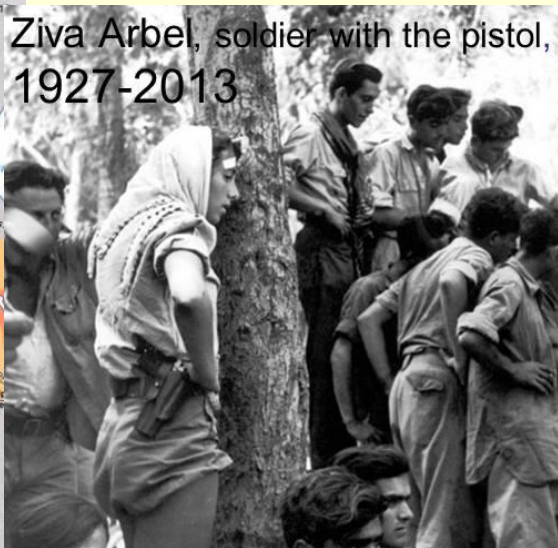


Roman empire in year 125, was extreme, under the rule of Hadrian

5-01

Dedicated to Ziva Arbel

Ziva Arbel, soldier with the pistol, drinks water from a cistern
1927-2013



Barfilya 1948

מי טקנה בכר?

Is it the reservoir that Ziva Arbel in 1948 drew her famous jar with



Haim Mazar Ziva

posed the melody of the famous jar song.

Ziva was born in Edirne
Edirne was founded
as Hadrianopolis,
named for Roman
Emperor Hadrian.

During his period Rome
arrived to latitude 40
ople.itu.int/~mazar/

The views expressed in the presentation are solely those of the author

Lecture based on:

An analysis of regulatory frameworks for wireless communications, societal concerns and risk: the case of Radio Frequency (RF) allocation and licensing

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