

Modern Geostrategy

Methods and Practice

02 Dec 2017

Summary

Geopolitical and geostrategic thinking is experiencing a comeback in times of dwindling resources and growing insecurity in politics, raising the question of what is understood by geopolitics and geostrategy in the 21st century and how this is reflected in practice.

In the past, the focus was mainly on land control, today an integrated geostrategic approach dominates with the factors space (land and sea) and time (resources and demography). After an introduction to the theory the geostrategic practice will be shown.

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1. Fundamentals

1.1 Introduction

Geopolitical and geostrategic thinking is experiencing a comeback in times of dwindling resources and growing insecurity in politics, raising the question of what is understood by geopolitics and geostrategy in the 21st century and how this is reflected in practice.

In the past, the focus was mainly on land control, today an integrated geostrategic approach dominates with the factors space (land and sea) and time (resources and demography). After an introduction to the theory the geostrategic practice will be shown¹.

1.2 Theory

1.2.1 Definitions and Concepts

Power manifests itself today in **control over people, territories, resources and information**, related measures are also known as **geopolitics** or **geostrategy**. Power in this context is the ability to enforce something against the will of others.

There are different definitions of geopolitics, but the core of the definitions is **spatial power politics**, the geostrategy is the underlying concept.

The word strategy comes from the ancient Greek *strategein* (leading an army).

The three classical strategic questions are:

- Who are we?
- What do we want?
- How can we achieve our goals?

The question ‘we’ is, who governs a state and/or whose interests a state serves? The question is not trivial: Is it perhaps only an elite or an ethnic group or a clan? The question ‘what’ is usually answered in set of topics called **Grand Strategy**, which defines the vital interests of a state².

Regarding the question ‘how’ Clausewitz had argued that the war is a continuation of the policy with other means. This was misunderstood as an invitation to make war, but he meant that a war must remain embedded always into political objectives, otherwise it may get out of control.

In the post-war era of the 20th century, the geopolitical debate was dominated by theories of **realism** and **neo-realism**. Accordingly, power politics was and is also referred to as ‘**Realpolitik**’.

¹ The basics of this paper and the maps are based on 3 books by the author (2009-2011) and the literature there, as well as the current literature listed in Chapter 5. Compared to the German version of this document, a few updates were made.

² As an example please refer to the Grand Strategy of the US by Hooker 2014.

Realism: The realism focused on the struggle for power. There was little room for international cooperation outside of military alliances. States were theoretically seen as monolithic blocks in a permanent fight for survival. The international system tended to be anarchic, because you could not rely on anything, and it was unable to build enduring higher-level power structures (read for example, Kissinger). Power is here a zero-sum game (If one has more power, the other has less).

Neo-realism: Neo-realism considers the possibility of international cooperation in arrangements, including co-operation on the same level (governance), but usually only with the **shadow of hierarchy**, here a supremacy (hegemon), which ensures that the agreements are really implemented. International organizations are therefore derivative, i.e. only instruments of the nation states, ultimately politics is still made by the states behind the international organization. The expansion of international organizations is not an **isomorphism**, i.e. taking over successful practices and structures from other organizations, but only **emulation** (imitating patterns), without sharing the underlying idea. Therefore, according to neo-realists, global governance can collapse at any time when a powerful state no longer wants to support it.

The neo-realists prefer **unilateralism**, which is one-sided action, because you can hold yourself always under control, while in global networking there is always the danger of being involved into something that is not interesting. In this view, non-governmental organizations (NGOs) are acting in a selective and selfish manner.

Power-political (real-political, realistic) approaches were subject to criticism in modern political science. An important argument is the idea that the theory is not complex enough and no longer reflects the complex reality.

In the 1980s, the institutionalists also referred to the **complex interdependence** between actors and the global dependency, especially in transnational problems where institutions and negotiations appear to be the rational and modern way of problem solving.

Power politics is sometimes regarded as immoral, because power-political analyses are often descriptive-explanatory and not normative-judging. But explanations are ultimately no excuses and are not considered as such by political science.

In recent decades, large-scale and well-publicized geo-strategies have been developed, notably the 1997 Zbigniew Brzezinski's *Grand Chessboard*, in which he gave recommendations on how the US can adapt its leading position regionally.

However, both supporters and opponents of these concepts, started from the fact that the US, as a leading economic and military power, will be able to shape the global order significantly.

But in 2017 the Pentagon, more specifically the *Strategic Studies Institute (SSI)* of the *U.S. Army War College*, published a study based on the so-called **post-primacy scenario**³, in which the US is still the largest economic and military power, but is no

³ Lovelace 2017 writes in his foreword: “*The U.S. Department of Defense (DoD) faces persistent fundamental change in its strategic and operating environments. This report suggests this reality is the*

longer able to shape world order due to rising competitors such as China. Thus, geostrategy now has to be re-thought for an unstable, multipolar world that is not necessarily dominated by Western values anymore. This process has just begun.

The trend in political and military practice goes back to the classic geostrategy, without questioning the sense of institutions and their advantages in general. Power political actions can influence or even determine the actions of institutions; the classic example is the veto in the Security Council of the United Nations. The trend is increasingly towards **factual and physical control**, rather than trying to seek or respect binding international agreements.

An important assumption in the classical geostrategy was that the political relations are considerably dependent on the geographical constellations (i.e. the direct neighbors are most important) and history (i.e. the experiences of the past are the basis for the current expectations). The actor constellations typically have grown historically. But history is not an objective parameter, historical events in political conflicts are often subject to contradictory interpretations. In addition, there is a danger of **presentism**, where history is only interpreted from the current point of view and the changing perspectives and paradigms of the past are ignored.

An important point of discussion is the question of whether there is an **objective power logic**. This is questionable. From a purely logical point of view, e.g. an alliance of China and Japan could be very effective, since this combination would represent by far the largest economic power and a strong nuclear force with a huge army and navy and would thus be able to dominate Asia and, in a second step, perhaps Europe too. In reality, however, such an alliance is unlikely at the moment.

While it is common sense that the territory, its location and the available resources have an influence on the behavior of states, it is not assumed anymore that geography has a deterministic effect, that is, that a state has no policy options due to its geography.

1.2.2 The Integrated Geostrategy

Of course, the strategists have always been aware that situation reports are only snapshots that can change at any time. Nevertheless, the focus has still been primarily on the territorial aspect, e.g. the securing of supply routes over long distances against competitors and enemies, in the energy supply also referred to as **Great Game**.

The planning of a modern geo-strategy must also be adapted to **foreseeable changes**, that includes aspects like energy reserves, food security, the long-term availability of raw materials, and, of course, the demographic development of all actors involved.

product of the United States entering or being in the midst of a new, more competitive, post-U.S. primacy environment. Post-primacy conditions promise far-reaching impacts on U.S. national security and defense strategy. Consequently, there is an urgent requirement for DoD to examine and adapt how it develops strategy and describes, identifies, assesses, and communicates corporate-level risk”

These considerations must also be incorporated in the territorial planning, as it is e.g. is already common in the strategic acquisition of large farming land abroad, i.e., all aspects must be considered integrated.

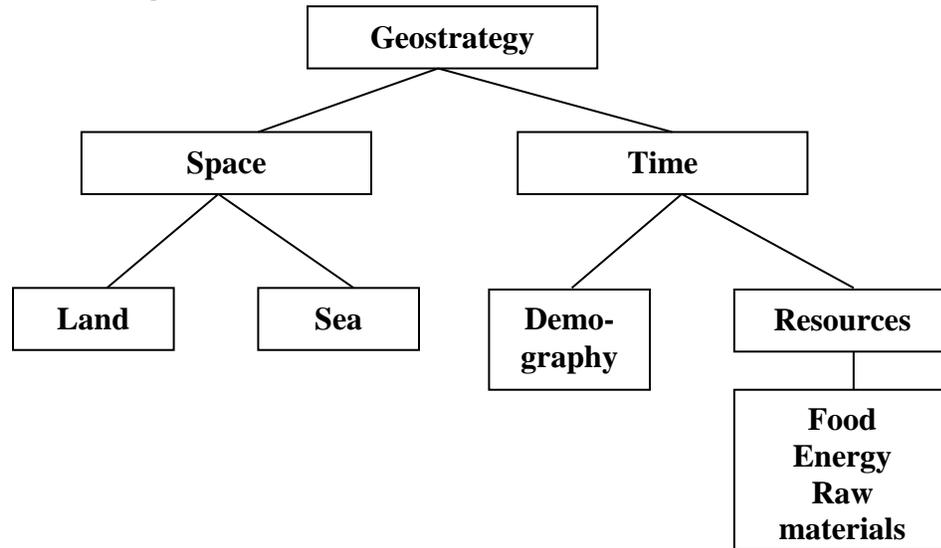


Fig.1: The Integrated Geostrategy

Source: own presentation

Unlike previous (neo) colonialism, powers are looking now for ideally resource-rich but *uninhabited* territories where they do not have to worry about anyone.

2. Practice

2.1 Factor Space

For the analysis of global power constellations, Europe was the best starting point in the cold war, but now it is the Asia-Pacific region, because it clearly shows that Russia and China together have larger areas of land than the United States, the United States in conjunction with its Western allies (especially Australia and the UK) still represents by far the largest naval power.

2.1.1 Starting Point: the US Perspective on Asia-Pacific

The US and its western allies control large parts of the Pacific (Zone 1 of the map) because the US has many small islands in the Pacific and has alliances with many of the small Pacific states. China faces a wall of US allies, namely Japan, South Korea, Taiwan and the Philippines (squares on the map). It should not be forgotten that the US is still present with troops in Afghanistan between Russia and China.

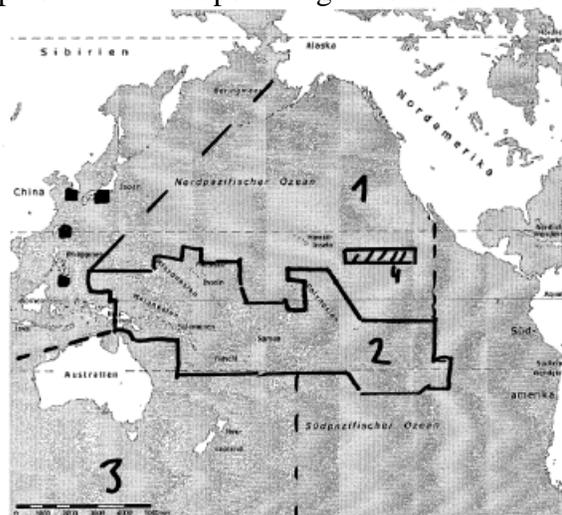


Fig.2: The US Perspective on Asia-Pacific

Source: updated version from Saalbach 2011

Zone 2 shows the external borders of Oceania, which is determined by sea borders rather than by land borders, since most states consist of scattered island groups that would not have coherent territory without the sea areas. Oceania consists of the former British colonies Australia, and New Zealand, which control or protect most of the other states together with France and the USA, and practically also most of the independent states (like Tuvalu, the Solomon Islands and Vanuatu, who do not have own armies). In fact Australia is the main military, political and regional power. Only Australia, New Zealand and Papua New Guinea have more than 30,000 km² of land area in the following list, most of them less than 1000 km².

Country	Further Territories	Defended states with no own army
Australia		Nauru Kiribati
New Zealand	Cook Islands Tokelau Niue Savage Island	Samoa
USA	Northern Mariana Islands Guam American Samoa	Federated States of Micronesia Kiribati (Gilbert Islands) Marshall Islands
France	New Caledonia Wallis and Futuna French Polynesia	
United Kingdom	Pitcairn Islands	
Independent States	Papua Neuguinea Fiji Tonga Tuvalu (Ellice Islands) Salomonen Vanuatu (New Hebrides)	

Tab.1: Oceania

Source: Condensed from respective government websites

- The islands are often spread over a wide area, so the outer islands are often difficult to access. Often, there is limited connection by air or ships, which makes trade difficult and also led to relatively large administrations. Kiribati has e.g. approx. 5.2 million km² water surface but only approx. 810 km² land surface. Agriculture, fish, textiles and tourism are important sources of income. There is also therefore an emigration tendency to the main islands (e.g. Kiribati) or abroad (e.g. Palau, Niue, where more than 90% emigrated to New Zealand, Tonga, Samoa).
- Most islands do not achieve a 100 million US Dollar national annual budget, despite development assistance.
- The **climate change** threatens the entire Pacific island system.
- In fact, it is not possible to defend the islands themselves, so that the Western states actually take over the defense. Even in Oceania, Australia enforced the **Biketawa Declaration** at the 31st Pacific Island Forum meeting, which for the first time included peacekeeping and stabilization interventions, as happened e.g. in Tonga.

Zone 3 then shows the **spheres of influence of Australia and New Zealand**, which reach to the center of the South Pole (Chapter 2.1.5), so the zone on the map is open at the bottom. Australia is involved in peacekeeping in East Timor, but also has other small islands west of Australia (Keeling-Cocos, Christmas Islands).

From there, it is not too far away from **Diego Garcia**, a central island in the Indian Ocean, with a British military base that is co-used by the US and forms a key strategic link to the influence zones and military bases of the Middle East, see Figure 3. Zone 4 is the area managed by the UN Organization **International Seabed Authority (ISA)**, where states can obtain licenses to extract manganese and polymetallic nodules from the seabed.

2.1.2 The Chinese and SCO Perspective

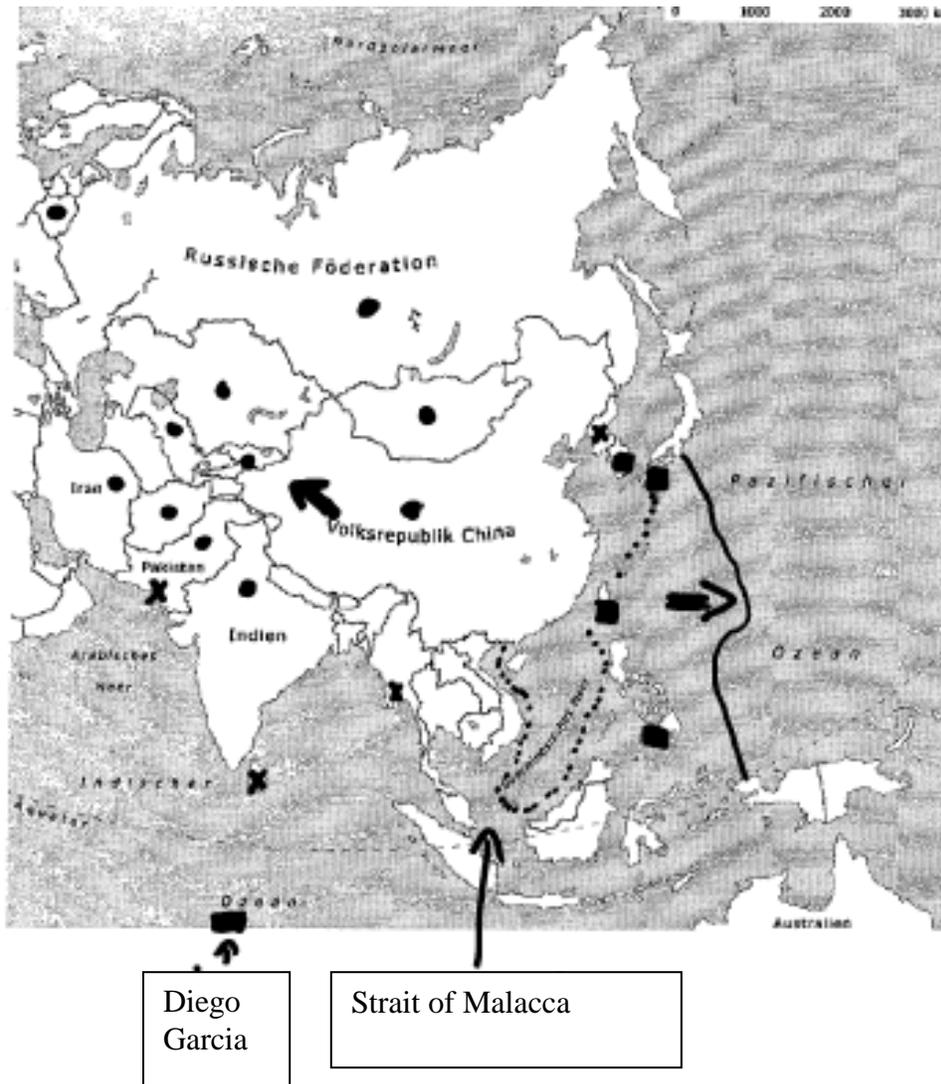


Fig.3: The Chinese and SCO Perspective

Source: updated version from Saalbach 2011, die ZEIT 11/2017, Kolonko 2017

- Circles: Member States and observers of the Shanghai Cooperation Organization SCO
- Squares: US allies with military presence
- Crosses: Allies of China or Chinese ports around India (string of pearls)
- Dashed line: First Island Line (First Island Chain), to Taiwan virtually identical to the South China Sea Area (Nine-Stripe Line), already controlled or targeted control zone
- Solid line with arrow: Second Sea Line (Second Island Chain), up to which the US influence is to be pushed back stepwise
- Arrow to Russia/Asia: direction of China to build a new Silk Road to Europe. There are also trade routes through Burma/Myanmar and Pakistan
- Strait of Malacca: most critical bottleneck and vulnerability of Chinese sea trade.
- Diego Garcia: British-US military base in the center of the Indian Ocean.

As mentioned earlier, China faces a wall of US allies, namely Japan, South Korea, Taiwan and the Philippines.

Walled in such a way, China tries to control the sea strip around its shores (South China Sea) and to extend the influence on the Indian Ocean. This applies in particular to the Spratley Islands. The Spratley Islands are located in the presumably oil- and resource-rich South China Sea, to which China imposes extensive territorial claims that overlap those of neighboring states. This also applies to the nearby Paracel Islands⁴.

The so-called **First Sea Line (First Island Chain)** is up to Taiwan virtually identical to the territorial claims on the South China Sea (**nine dash-line**) and corresponds to the already controlled or targeted control zone. China disputes with Japan the ownership of the Senkaku Islands (Chinese Diaoyu). China's takeover of the Senkaku/Daiyou Islands would break into the geographic barrier of US allies between Taiwan and Japan. Likewise, China has expanded its air defense zones.

China is trying to secure control of the area e.g. by building artificial islands with military presence and through bilateral agreements with neighboring states to clarify territorial claims⁵.

The **Second Sea Line (Second Island Chain)** from Japan to Guam is the border to which the US influence is planned to be pushed back stepwise. The US Navy's increasing exposure to Chinese activities is one of the reasons for the American focus on the Pacific, also known as the **Pacific Turn** or **Pacific Pivot**.

China is enhancing its relationship with Burma (Myanmar) and is building on its infrastructure, which will also serve as a future trade route to South Asia. Myanmar is a first, 'pearl' in the so-called **String of Pearls** of China, which puts it around India, in order to position itself strategically and economically. The goal of China is to establish trading stations and ports throughout Asia, while Myanmar and Pakistan are important land routes for Chinese goods.

The String of Pearls also includes a harbor in Bangla Desh. In Chittagong there is a container port, in Burmese Sittwe to a deep sea port and a base in the Pakistani Gwadar. In Sri Lanka, China is expanding the port of Hambantota. The idea is to further develop the trade routes on land and sea, the **New Silk Road**, which is planned to reach as far as Western Europe, the sea connections are planned to reach to East Africa, where China built a military base in Djibouti in 2017, and via the Suez Canal to Europe⁶.

The attempts of the West to gain control of the Straits of Malacca, and thus to control an important bottleneck from Asia to the Indian Ocean, have so far failed.

To prevent its encirclement by China, India is stepping up its relations with Vietnam, which has allowed India to use the deep-sea port of Cam Ranh. In addition, India has set up an observation station in Madagascar.

India is thus trying to counteract Chinese pressure and to influence the Indian Ocean. However, the Indian control attempts also border on the EU mission to Somalia, whose area of operations is large.

⁴ see e.g. Die ZEIT, No. 17/2011

⁵ Kremb 2017, p.5

⁶ Kolonko 2017, p.5

Despite regional conflicts (such as the so-called Sikkim Standoff of 2017, when China and India barely passed an armed conflict in disputed border regions⁷), since 2 decades a growing and increasingly stronger Eastern security organization, the **Shanghai Organization for Cooperation SCO** is active, which since 2017 also includes India and Pakistan as full members. With the NATO and the SCO, there are now two organizations facing each other, together covering large parts of the Northern hemisphere. Since its start in 1996, the SCO has focused on security co-operation, which includes military activities (maneuvers) as well as counter-terrorism and regular consultations with Member States.

NATO		SCO	
America	Europe	Europe	Asia
United States Canada	Luxembourg Czech Republic Estonia Montenegro Turkey France Netherlands Portugal Albania Slovakia Belgium Croatia Romania Bulgaria Latvia Slovenia Denmark Lithuania Spain Germany Hungary Greece Norway Great Britain Iceland Poland Italy	Belarus (observer) Russia	Russia Kazakhstan Kyrgyzstan Tajikistan Uzbekistan China India Pakistan Observer: Mongolia, Iran, Afghanistan

Tab.2: NATO and SCO

Source: Websites of NATO and SCO

The Gulf region is protected by a ring of Western military bases in the Arabian Peninsula, facing Iran. The Mediterranean is a key control area of the EU. Please note the Great Britain owns military bases on sovereign British territory in Southern Cyprus, although Russia has access to the Mediterranean Sea as well from Syria (Tartus). The Atlantic Ocean is largely in the hands of the West or NATO.

⁷ Pabst 2017, p.7

2.1.3 The American Security Belt

The United States has built a kind of **security belt** around the globe with its military presence. In addition to the facts already mentioned above, it is important to mention that a system of allies and navy bases (Israel, Egypt, Kuwait, Bahrain, Qatar, Saudi Arabia) secures the connection from Europe to Asia.

In Sub-Saharan Africa, a new AFRICOM High Command was created in 2008, with a particular focus on jihadists, initially coordinated from Tamanrasset (Mauritania, Niger and Mali), but the belt is also reaching to East Africa, including Ethiopia and the Seychelles. The activities include the coordination of local forces, Special Forces and operations and several drone bases for reconnaissance and combat missions⁸.

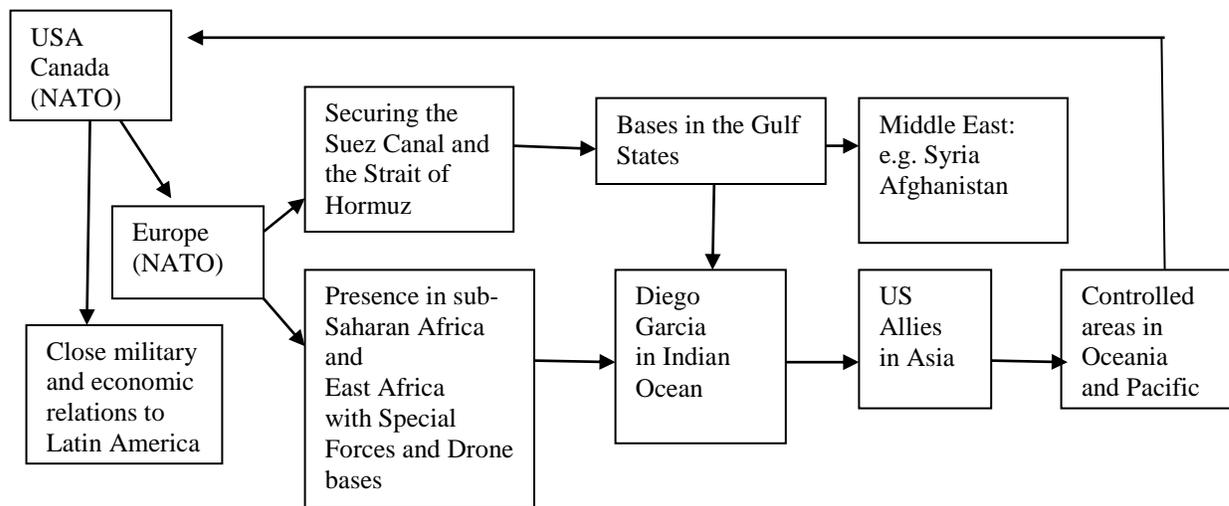


Fig.4: The American Security Belt

Source: own presentation

Due to the vast overweight of military spending, the US dominates NATO and is still an essential part of the European security architecture.

The European Union is aware of the problems (inadequate coherence and coordination, fragmented armies and technologies), but its influence extends far beyond the 28 Member States, in particular through:

- The small states Andorra, San Marino, Vatican City and Monaco are very closely linked to the EU and issue own Euro coins.
- The European Economic Area (EEA), which expanded the internal market with Iceland, Liechtenstein and Norway, also the EU has a customs union with Turkey.
- The CFA franc (Franc de la Communauté Financière d'Afrique) fixes large parts of West Africa economically to the Euro, as well as the CFP franc in the Pacific.

⁸ Signer 2017, p.4

- By this and other arrangements, more than 40 countries worldwide are factually bound to the Euro system.
- Development assistance agreements with about 80 states ensure global presence and influence.

2.1.4 Russia

Russia's geo-strategy can be broken down as follows:

- In the west, Russia faces NATO, which has expanded by many new Eastern European members. Russia is modernizing its army and is, of course, still the largest nuclear power alongside the US and the leading cyber force with the US, China and Israel. Russia is vital to Europe's energy supply (gas pipelines), so trying to get or to bypass Russian gas is part of the Great Game for route control (including Yamal, South Stream and North Stream pipelines)⁹. The Syria engagement secures Russia's access to the Mediterranean Sea and its influence in the Near and Middle East.
- In the South, Russia is competing with China and others for influence and markets in Central Asia. It has established a security architecture overlapping with the SCO and is also working on increased economic integration. In 2015, the **Eurasian Economic Union** of Russia, Belarus, Kazakhstan, Armenia and Kyrgyzstan became active. There is also the **Collective Security Treaty Organization (CSTO)**, in which Russia, Armenia, Kazakhstan, Kyrgyzstan, Tajikistan, Belarus and Uzbekistan (left 2012) work together on security issues from 1992 onwards. But that does not change the fact that Russia and China agree on many security issues and therefore have been cooperating in the SCO for more than 2 decades.
- In the East, the troubled situation in Afghanistan and Tajikistan is a major problem.
- In the north, the main problem is the dispute over large Arctic areas, see Chapter 2.1.6.

A special feature of Russian politics are the **Frozen Conflicts**. In conflicts in the post-Soviet space, the forces allied with Russia have almost always managed to establish a new status quo with de facto control in the long run. These are Nagorno-Karabakh (Azerbaijan), Transnistria (Moldova), Abkhazia, South Ossetia (both Georgia), now the Republics Donetsk and Luhansk (both Ukraine). The annexation of Crimea was conceptually out of the ordinary and was justified by Russia with historical affiliation, but now also is the most critical issue with the West.

⁹ Triebe 2017, p.16

2.1.5 Antarctica (South Pole)

In fact, the Antarctic is being protected by the **Antarctic Treaty**, which will still be in place for further decades, but many countries have already positioned themselves with research stations. Moreover, there are also territorial claims from the days of the South Pole expeditions on the approximately 14 million square kilometers South Pole area, which possesses a landmass under the ice, in contrast to the North Pole.

A considerable part of the claims is only made by one state, so there is no real competition. For example, France and Great Britain set up an administration of the Antarctic Territories; also coins were emitted by Great Britain.

The following map shows only the areas that are not contested between several states. There is also a large area with overlapping claims of Argentina, Chile and Great Britain. Great Britain still holds the Falkland Islands (Argentinian Malvinas), marked here as F, and the islands of South Georgia and South Sandwich (SG), which together form a kind of barrier to the Antarctic. South Africa is mentioned here only to be able to clarify the location of the areas in the map, it made no claims.

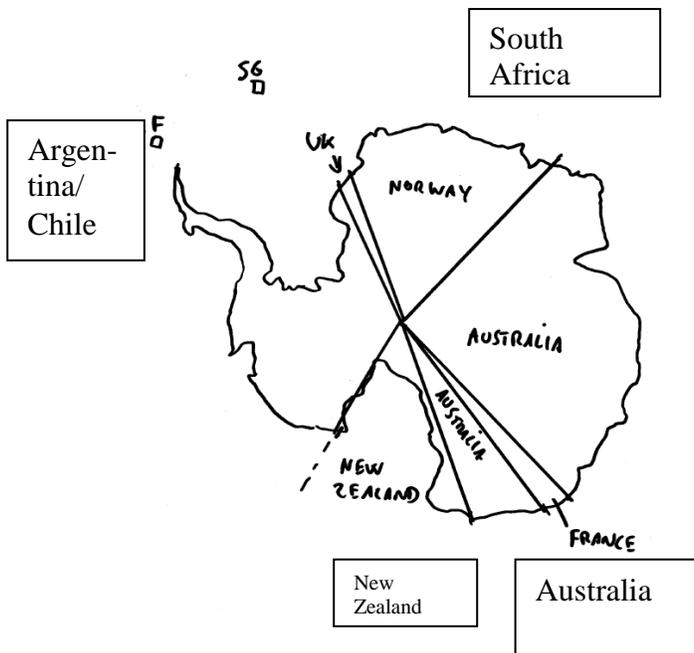


Fig.5: Territorial Claims in Antarctica

Source: Condensed from respective government websites about Antarctica

2.1.6 The Arctic Sea (North Pole)

In 1958, despite the cold war, the **Geneva Sea Convention of the UN** brought more legal certainty to the states. The new **United Nation Convention on the Law of the Sea (UNCLOS)** came into force in 1994.

Important aspects are: The coastal seas are the sea strips with a maximum of 12 nautical miles from the territorial baseline, in further 12 nautical miles (22 km), the state could continue to enforce laws (contiguous zone). The **exclusive economic zones (EEZs)** extend to 200 nautical miles from the baseline where the coastal nation has sole rights for research, artificial buildings and exploitation.

The **continental shelf** is the geological prolongation of the land territory into the sea, but the claim acc. to UNCLOS may never exceed 100 nautical miles beyond the 2,500 meter isobaths (the line connecting the depth of 2,500 meters). The claiming nation must prove that the seabed is geologically a continuation of the land. Applications must then be submitted to the respective UN Commission.

Russia claims 1.2 million km² Arctic areas and argued that the so-called **Lomonosov Ridge** is an underwater extension of continental crust in the Arctic Ocean and thus an extension of Russian territory. However, Canada is disputing this with Russia. Another important issue for Canada is the **Northwest Passage**, a potential new shipping route.

USA did not sign UNCLOS because the signature was considered as restriction of the sovereignty and they believed to achieve their goals unilaterally.

The North Pole contains *no land* under the ice, so only oceanic sectors are claimed, except for a small strip between Denmark and Norway already the whole North Pole:

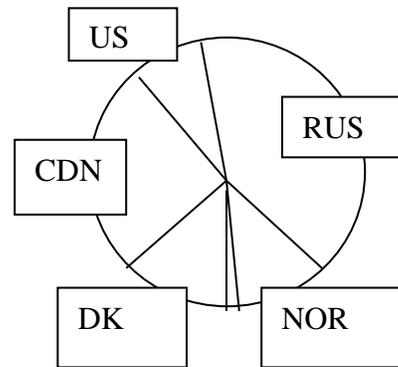


Fig.6: Territorial Claims in the Arctic Sea

Source: own presentation

The impact of UNCLOS is also globally significant. In 2017, Portugal claimed 3.8 million km² in the Atlantic Ocean, the new border would then would be halfway to the US East Coast¹⁰.

¹⁰ Fischer 2017, p.5

2.2 Factor Time

At this point the most important current trends are discussed.

2.2.1 Demography

In simple terms, a population can only be kept stable if a pair has an average of 2.16 or more children (five pairs with 2 children, every sixth pair with 3 children), because there are always some children dying due to infections, cancer, hereditary diseases, accidents or crimes so that a birth rate just over 2.1 children ensures that two parents are replaced by 2 surviving children.

While in the past, strategies were pursued where more people seem to bring more national power, the states of the Northern hemisphere are meanwhile focusing on preserving the status quo and the age structure.

The global demography is shifting to the South, more specifically to Africa, with a focus on Nigeria and to Southern Asia (India, Indonesia, and Bangladesh). Nigeria will have a population of about 750 million by 2100, India is targeting 1.4 billion people, Indonesia and Malaysia several hundred millions¹¹.

The **World Bank database** contains freely available detailed figures and forecasts of demographic trends from 1960 to 2050 for 217 countries and regions (data.worldbank.org).¹²

The most important question is whether or when the world is **overpopulated**. The supply of food is currently still possible (Chapter 2.2.2.3), but not only the population, but also the individual wealth and consumption is growing rapidly and thus the **ecological footprint**, i.e. the environmental impact.

Even with further technological advances, it does not seem ecologically possible for the world's population to reach a western standard of living. Protection of environment thus would require either a restriction from developed countries with a fair distribution or a world where few people consume a lot and the vast majority remains permanently poor (at low consumption levels)¹³.

Globally, the World Bank data show that expected birth rates are steadily declining in the long term, and by 2050 will have approached or even fallen below the stability limit of 2.16 in most regions.

Europe will have about 500 million inhabitants in the long term. Europe's relative share of the population is constantly shrinking, and European security politicians fear that Europe's importance will diminish. With less than 10% of the world's population, it will be increasingly difficult to maintain a position of power. Taken together, many authors assume that the combination of the European and African trend will lead to an increasing **migration** and policy needs to handle this.

¹¹ Plickert 2017, p.20

¹² World Bank 2017

¹³ Refer also to Diamond 2005

A particular problem are aging societies which is affecting large parts of the Northern hemisphere, from Europe to Japan. There are no historical models for such a situation. However, there is currently a rapid **automation** in factories, offices, but also agriculture through machines, robots and artificial intelligence¹⁴ projects. On the one hand, this could destroy many jobs, but it may provide the necessary production forces for these aging societies.

If, as proposed by Bill Gates and others, a **robot tax** would be implemented, social systems could possibly be preserved even in overaged societies¹⁵. However, the industry expresses concerns that a robot tax would ultimately be a kind of modernization tax with the respective consequences.

The **Youth Bulge Theory** argues, that societies with a young population and higher birth rates tend to be more aggressive than aging states that are already less aggressive due to the lack of potential soldiers¹⁶. It is controversial whether this aggressiveness is really a consequence of youth itself or more related to the difficulties of providing, training and integrating rapidly growing populations into the labour market. In addition, automation allows new forms of warfare, with far fewer soldiers.

Examples of demographics as a strategic question:

Russia suffers from an increasing emptying east of the Ural¹⁷. At the moment only about 6% of the population, i.e. about 8 million people live east of the Ural, i.e. in the two eastern thirds of the Russian territory. These few people mainly settle along the Trans-Siberian railroad, so that large parts of Russia are virtually uninhabited, which is also related to the harsh climate in the Russian North.

But **China** also has demographic problems. In order to curb the population in the time of famine, the one-child policy took in place in China, i.e. every family should only have one child. In the meantime, the population has aged so much that the Chinese Communist Party has made this problem and the care of the elderly to a top priority. In addition, a partial abandonment of the one-child policy has taken place, initially in the Southern regions¹⁸.

In **Israel and Palestine**, the Arabic-born population is growing much faster than the Jewish one, so that the Arab-descended population may represent the majority in the Israeli heartland in the 2030ies¹⁹. This alone will gradually change the balance of power in Parliament already.

¹⁴ Deloitte Insights 2017

¹⁵ Hagelüken 2017, p.17

¹⁶ Weisflog 2017, p.17

¹⁷ Zekri 2009

¹⁸ Kuehl, Hardenberg 2010, p.13, Mayer-Kuckuck, 2010c

¹⁹ Dougherty 2004

In the US, a **Hispanization** is in progress, especially in the southeastern regions. This has positive demographic effects, the population is younger than the European and will continue to grow. But this also includes the advance of the Spanish language as factual second national language and also an increased proportion of Catholics in the still Protestant-dominated US. The Hispanic immigrants have already replaced the Black population as the second largest group. Immigration from Asia, e.g. from Korea is also increasing, so that 2050 Asian immigrants will already be the third largest population group.

2.2.2 Resources

2.2.2.1 Raw materials

The raw materials can be divided into three groups:

Metals	aluminum, antimony , beryllium , lead, chromium, iron, gallium , germanium, indium , cadmium, cobalt , copper, lithium, magnesium , manganese, molybdenum, nickel, niobium , tantalum , titanium, tungsten , zinc, tin
Precious metals	gold, palladium, platinum , rhodium, silver
Industry minerals	barite, bentonite, feldspar, fluorite , gypsum and anhydrite, mica, graphite , potash, kaolin, phosphate, quartz sand, sulfur, rock salt, cement, zirconium

The bold raw materials are considered strategically important according to a European Union definition from 2010.

Tab. 3 Raw materials

Source: Saalbach 2011

All industrial raw materials have in common that most of the raw materials can only be found in a few countries in relevant quantities. For almost all raw materials, the 'Top 5' of the producing countries account for 50%, often even more than 90% of the production volume. Sometimes regional inequalities are extreme: According to the German Federal Government 2007, 45% of the current 'production' (extraction) of lithium took place in Chile, 71.9% of the magnesium in China, 88.0% of the niobium in Brazil, 87.1% of tungsten in China and 77.8% of platinum in South Africa. It is not surprising that large states are often the countries with the most commodities, because it is statistically less likely that a small state covers large reserves of a certain commodity.

The main problem is that digital technologies, such as cell phones and computers, contain **rare metals** such as niobium, germanium, indium, palladium, cobalt, and tantalum. A shortage would have a huge impact because recycling could not compensate for the losses. China's very large share of rare metals, which are irreplaceable for the IT industry, is therefore strategically significant.

2.2.2.2 Energy

The main strategic trends are:

- **Fracking:** the new extraction methods, especially in the US, are more and more productive and cost-efficient, making the US one of the largest oil producers.

Summing up the market reports, the break-even threshold for fracking fell below \$ 30 per barrel in 2017²⁰.

- In the long run, the planned European transition to the **electric car** (e-mobility) will affect oil demand.
- OPEC tries to counter these trends with **subsidy cuts**. In addition, the Gulf States are also preparing for the **time after the oil**. By 2030, the dependency on oil and gas should be overcome, which in practice requires enormous reform efforts and investments; these reforms that have already started.
- As a result, global **peak oil** is now far away, while a **regional peak oil** is approaching, especially in the Gulf region.
- While Europe has increasingly critical views on nuclear power, **nuclear power plant construction** continues to grow globally. However, the volume of **renewable energy** also increases as well as the efficiency of energy production.

2.2.2.3 Food Security

The absolute grain production is increasing, but the grain production per capita has stagnated since about 1970 and as the world population continues to grow, agricultural production is increasingly relevant²¹. Theoretically, the restriction of meat consumption could noticeably ease the situation, but in reality the **demand for meat** tends to increase.

Another issue is the widespread **illegal fishing** close to the African coasts. The control of the world's oceans has not yet solved the overfishing problem. Due to risk of infections and other issues, fish farms can only be a partial solution of the problem.

Food security, i.e. ensuring the availability of food for the own people is increasingly important, so some countries are reluctant to open their markets or to give up subsidies for agriculture.

In order to prevent bottlenecks in the long term, in the past decade China and South Africa have already bought large areas in the Congo, China in the Gambia and South Korea in Madagascar.²² There are many more acquisitions planned or underway, e.g. in East Africa, in Europe especially in Ukraine and Russia, in Asia-Pacific in Indonesia and Papua New Guinea²³. China has also acquired more land in the Philippines and Laos²⁴. Today, the terms **Foreign Direct Investments FDI**s or more critically **land grabbing** are used for these measures.

²⁰ Streit 2017, p.30-31.

²¹ Grill 2010, p.22. Gross 2009, p.9 points out that per capita production varies, but is still lower than at the end of the 1980s.

²² Zapf 2009

²³ Konzernatlas 2017, p.13

²⁴ Wälterlin 2010, p.17

2.2.2.4 Water and Sand

In the long run, the resources water and sand could shift to the center of attention.

North Africa as well as the Near and Middle East rely on additional primeval water reservoirs, the **aquifers**, for their water supply. However, these aquifers have been overused and also largely depleted by population growth across the region.

Egypt and East Africa rely heavily on the river Nile. In the Nile region, increasing **salinization of the Nile Delta** may result from by rising sea levels, in addition to rapid population growth. Egypt and Ethiopia as main users will each have more than 100 million inhabitants by 2030 and will depend on usage co-operation to prevent a Great East African war in the 2020s.

Population growth and **urbanization** are driving urban development globally. However, the sand needed for stable construction needs a certain granularity, the abundant Sahara sand is unfortunately too fine-grained.

The sand is therefore beginning to be scarce, Singapore has recently excavated and eliminated about 20 islands of its neighbor Indonesia for its own land expansion, and **scarcity of suitable sand** is more and more common globally. The future of urban construction may be the use of other polymers in 3D printing of houses or the use of pressed wood²⁵.

²⁵ Rietz 2017, p.33

3. Geostrategy of Information

3.1 Strategic Goal: Physical Control of Data Flow

Strategies are long-term concepts, while cyber-attacks and espionage take place over shorter periods of time²⁶. The modern information warfare, i.e. the combined manipulation of digital technologies and information to influence opponents, is often still done as short-term activity (e.g. before elections).

In fact, the long-term strategies are aimed at **securing or regaining physical control over the data flows**, despite global networking.

In fact, the idea of a virtual control of the own population and opponents appeared to be problematic in the long run for three reasons:

- In the past, access to information was often vertical-hierarchical, but networking allows aggressive hackers attacking even presidents and releasing their information. Leaks are becoming more common and more serious.
- Virtual surveillance allows unprecedented control of the own population, but also for attacking adversaries, as shown in the so-called ‘OPM-Breach’, where hackers copied the personal files of US citizens with security clearance checks and also they copied their digitally stored fingerprints.
- Virtual control can be used to gain and secure power through technical superiority, but if the technology advantage is disappearing, it is practically impossible to keep away from attackers²⁷.

²⁶ For background information on cyber warfare refer e.g. to the free Paper “Cyberwar –Methods and Practice” <http://www.dirk-koentopp.com/downloads/saalbach-cyberwar-methods-and-practice.pdf>, and the literature cited therein. Also it includes examples and further details to the above mentioned issues.

²⁷ For example, technological advantage can establish control as follows: High technology is sometimes sold by foreign providers only as a closed module, this is called **black box technology**. Such technology is e.g. built into drones, combat aircrafts and submarines, ensuring the control and dependency of weapons systems and users on the technology provider for the entire life cycle of the weapon system.

3.2 Technical Background

Data, i.e. bits and bytes are not fully virtual, but still have physical representations as a defined electromagnetic condition on storage media and device memory systems. Even wireless transfer results in electromagnetic waves and finally these waves end up physically in devices again. It is helpful to keep the general infrastructure of the internet in mind.

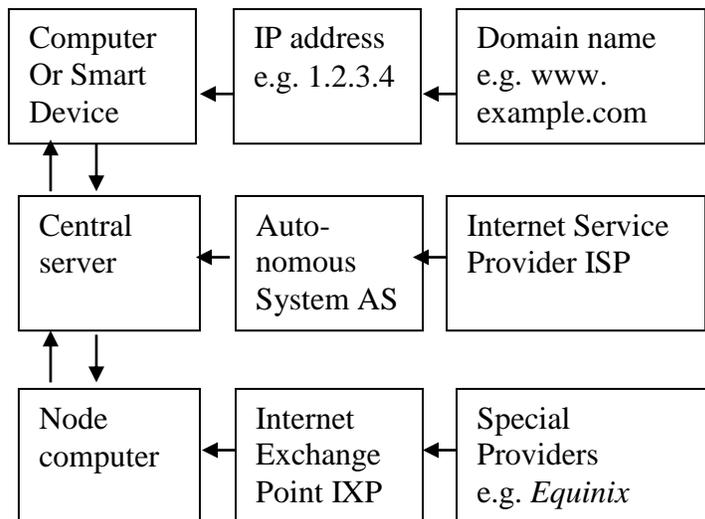


Fig. 7 Simplified model of Internet communication

Source: own presentation

Typically, an internet communication starts at a certain computer and the data are then transferred to the central computer of an **Internet Service Provider (ISP)**. This central computer is formally known as **Autonomous System (AS)** and large providers may have many of those. However, the Internet Services Providers need to be connected with each other, this is done via node computers, formally known as **Internet Exchange Point (IXP)**. In reality, these are large computer centers and not only single computers.

In the physical world, the internet is finally bound to a physical network with a significant level of centralization. The US-based company *Equinix* controls according to their website with their own IXPs and co-location of client computers in their data centers roughly 90% (!) of the data volume transfer of the internet.

This **physical centralization** can also be found on the lower infrastructure levels: satellites simply cannot transmit enough data compared to terrestrial transmission methods. The 'backbone' of deep-sea cables was not widely recognized until the beginning of 2008, when a ship accidentally cut a cable from Africa and temporarily disconnected some states from the internet.

The backbone market has been threatened by a lack of competition in the past decade, where EU and US were hesitant to agree to the formation of the largest backbone

provider, MCI WorldCom, by merger: MCIWorldcom (Verizon); SprintLink, AT&T Worldnet, Cable & Wireless, and Genuity controlled the global backbone market as the big five.

This is also applicable for the downstream levels: for example, IT infrastructure is provided by large providers such as Cisco, which also has a significant market share in China. The computer and smartphone market is also globally controlled by relatively few companies.

3.3 Implementation

The control of physical data flows can be (re)gained by several approaches, namely by

- physical system access
- creation of cyber-islands
- squeezing foreign companies out of their own security architecture.

Long-term control can ensure **physical system access**, e.g. access to servers, to internet nodes, tapping of deep sea cables, etc.

- Increasingly, states require that servers are set up by international providers in their own country so that the authorities can have direct access to the system.
- Moreover, some states require that certain data are to be stored only nationally and not allowed to be sent or stored outside the country. This may not really protect against espionage, but it increases the attacking risks and costs of the attacker.
- The first attempt of physical control, the separation of subsystems from the internet, can usually only delay the opponent's access.
- Note that despite the rise of remote hacking, **physical interception and data collection units** closely located to the targets are still essential for enduring and successful intelligence operations.

Formation of cyber islands

- Blocking access to content from foreign providers, in conjunction with blockades of Virtual Private Network VPN tunnels allow the creation of **cyber islands**.
- A 'soft' isolation method is the offering of national services and platforms, which increase the attractiveness for the own population and at the same time create linguistic and possibly also technical entrance hurdles for foreigners.

Squeezing foreign companies out of their own security architecture

- States are increasingly making sure that foreign providers cannot buy into their critical infrastructure and thus enter the inner ring of cyber defense of the respective state.
- Foreign security companies are increasingly being targeted by investigators.
- Africa has the problem that the Internet is more smartphone-based than other continents, and international competitors dominate the market, thus taking control of markets and infrastructure.

4. Concluding Remarks

The paper has shown the theory and practice of modern geostrategy, showing that the global trend is moving from legal-contractual control back to physical and factual control.

This poses a whole new challenge to the current world order, which was described by the US in 2017 as *Post Primacy*.

Geostrategy is the combination of spatial and temporal components. This is not fundamentally new, but in practice the focus has often been on space, especially on the control of the country, despite the importance of sea routes and sea territories.

This paper intended to understand and to develop geo-strategy as an integrated concept of critical factors.

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