

narrative trends of the most important components associated with the Chinese strategic goals, and I also check how these trends are correlated to the narrative trends of crucial megatrends.

This study on the one hand, helps experts interested in China to learn about the embeddedness of Chinese grand strategic goals in global megatrends, and it also helps to identify components of this strategy that had the greatest impact on the global narrative. On the other hand, the study provides guidance to experts involved in foresight to better understand how China can potentially influence the current megatrends.

Literature review

The review section focuses on two separate concepts. First, it introduces the concept of grand strategy and identifies possible components of the Chinese grand strategy. Second, it discusses the literature of megatrends with the intention of uncovering the ones that are most mentioned by experts.

Grand strategy

Blagden (2021) adopting a structural-realist approach notes that states exist in an anarchic international system, therefore the survival of the state and the maximisation of security is the number one goal that is necessary to fulfil any other interests of the citizens. Blagden calls this security-maximisation strategy *realpolitik*. As Goddard & Krebs (2015) show, the articulation of national interests and the identification of the threats to the country are the first two components of a grand strategy. According to Mokry (2023) national interests can be constructed from six elements: 1) defending the country's territory, political system, and citizens; 2) expanding the country's economic relations; 3) aiming at global governance; 4) offering global public goods; 5) controlling the region; and 6) promoting the country's values.

Grand strategy is a comprehensive, long-term plan that describes how a country wants to achieve its major objectives (Mastro, 2022). It is a set of objectives and the means to achieve them, where both the means and the objectives span from national security items to economic issues (Bracken et al., 2021). Bracken et al. (2021) also add that while most countries have short- and medium-term objectives (e.g., economic growth, building international relations), the design of a grand strategy requires a clear definition of long-term goals, and a linked set of measures that help to integrate efforts in many different fields. Doshi (2021) also emphasises the integrated nature of the grand strategy. According to him, the grand strategy is intentional, coordinated, and implemented over multiple means (statecraft, and military, economic and political).

The design of a grand strategy is therefore a complex task. Grand strategy goes beyond behaviour, and principles, it requires long-term objectives and a deliberate, detailed plan (Silove, 2018). Because of its complexity most countries, even most great powers usually don't have a grand strategy (Doshi, 2021). Does China have one? According to Doshi (2021), experts are divided over this question. One group (Doshi calls them "believers") is convinced that China already devised its grand strategy to become a hegemon power; the other group (the "sceptics") is still not convinced about it. While the United States has its own explicit grand strategy statement (US National Security Strategy Report), it is unknown whether China has such a document. But Bracken et al. (2021) show that China has elaborate sector strategies: detailed social goals, foreign policy objectives, a manufacturing strategy, an education modernisation plan, a cyber security strategy, and a rural revitalisation strategy. The assumption of a grand strategy would mean that these sector strategies were designed to serve the same long-term objectives.

What these long-term objectives could be? According to Mastro (2022), the starting point is the Chinese Communist Party (CCP) whose main objective is to perpetuate its rule over the country. The CCP's way to achieve legitimacy is to deliver on key promises (Mastro, 2022), and the

sector strategies represent these promises and the means to achieve them. Doshi (2021) quotes Evan Osnos on what the believers see as the Chinese grand strategy: “China is preparing to shape the twenty-first century, much as the U.S. shaped the twentieth” (Osnos, 2020). A country may choose different paths to revise the world order; it may opt for a strategy that is based on the already existing institutions, it could seek for a rules-based revolution, it can exit the already existing institutional world order, or it can opt for hegemonic violence (Goddard, 2018). Mastro (2022) suggests that China’s choice is the second one (rules-based revolution), which means that the country tries to maximise its influence over the existing institutional order, but it is also open to creating new institutions when the former strategy is not effective enough.

According to Doshi (2021), there are two main ways in which a rising state can peacefully displace the hegemon power: first, blunt the hegemon’s control, and then build forms of control over others. Until now, China executed this displacement strategy in three stages: first, blunt American power over China (1989-2008); second, build the foundation of regional hegemony in Asia (2008-2016); and third, the expansion of these two strategies to the global scene (Doshi, 2021). Bracken et al. (2021) also conclude that China’s strategy changed over the years. Between 1979 and 2008 China proceeded cautiously while trying to hide its capabilities. The financial crisis prompted the Chinese leaders that America is weaker, and so the country became more open about its aspirations.

Experts typically mention the same means by which China aims to achieve its long-term objectives:

- Building up military power, initially started as an asymmetric strategy (building on own strength and trying to exploit the weaknesses of the adversary) (Bracken et al., 2021).
- Consolidating power at the peripheries (like Tibet or Hong Kong) and pushing for more control over disputed territories in the South China Sea, and East China Sea (Mastro, 2022).
- Expanding economic influence through the Belt and Road Initiative (BRI) (Mandelbaum & Weiffen, 2023), a project that involves more than 130 countries and allocated more than 1 trillion USD worth of investments (Mastro, 2022).
- Establishing new standards especially in areas of technology where China is equal to or even ahead of the West (space exploration, cybersecurity, 5G communication) (Bracken et al., 2021; Mastro, 2022). The promotion of cyber sovereignty is seen by many as an attempt to promote autocracy around the world (Mandelbaum & Weiffen, 2023; Mastro, 2022).

Megatrends

The term ‘megatrend’ was coined by John Naisbitt. His 1990 book that he co-authored with Patricia Aburdene defines megatrends as large social, economic, political, and technological changes that are slow to form, and once in place, they influence us for some time (a decade or even longer) (J. Naisbitt & Aburdene, 1990). According to Batt (2018) “a megatrend is a significant long-term shift in environmental, economic and social conditions that defines our future world and the pace of change” (Batt, 2018, p. 1). “Megatrends are global changes in individual, social and technological structures which are thought to have a major impact on the futures markets” (Hessel, 2014, p. 99). They are “gradual yet powerful trajectories of change that will at some point express themselves with explosive force and throw companies, individuals and societies into freefall” (Hajkowicz, 2015, p. 1). Its course is similar to the product life curve, so we can distinguish introductory, growth, maturity and decline stages, and the “mega” nature of the trend is determined by the length, spectrum and depth of the impact (Malik & Janowska, 2018).

Some approaches define the term by setting the criteria for megatrends (Linthorst & De Waal, 2020; Vukanović, 2018). These criteria typically focus on four aspects: time span, geographic scope, scope of affected systems and certainty of occurrence. The time span of megatrends is

long: 10-15 years (J. Naisbitt & Aburdene, 1990), 20 years (Utikal & Woth, 2015), or even 50 years (Galinska, 2018). Additionally, megatrends are gradual shifts that are slow to form (Hajkowicz, 2015; J. Naisbitt & Aburdene, 1990), and their impact is hard to assess because they often coincide with short-term phenomena (Von Groddeck & Schwarz, 2013). The geographic scope of megatrends is very large, authors usually describe it as global (Jeflea et al., 2022; Vukanović, 2018). A megatrend affects social, economic and environmental systems at the same time, its impact is complex and consists of a mixture of different influences (Hajkowicz, 2015; Horvath et al., 2022; Malik & Janowska, 2018; Mittelstaedt et al., 2014). According to the majority of authors, the probability of the occurrence of a megatrend is high, so the examination of megatrends is sharply separated from the low-probability effects, e.g. from research on the black swan phenomenon (Taleb, 2007). Megatrends can help decision makers to better prepare for a seemingly unpredictable future (Hajdú, 2013).

Based on the four criteria, a megatrend represents social (determined by human interactions) or natural shifts, which exert their effects with relatively high certainty over a long period of time (decades), in a broad (global) geographic environment and on a broad spectrum (in a way that affects several systems). Certainty is weakened by the slow and gradual formation and also by the complexity of the trajectory.

To prepare my study, I reviewed the literature of the last 10 years. I included 19 works from the period 2014-23. Some of the selected works were meta-studies that summarize the results of many other authors (Retief et al., 2016 combine 6 reports; Linthorst & De Waal, 2020 162; Jeflea et al., 2022 840). These are the most important megatrends of the 21st century according to the reviewed studies:

- New globalisation - power shift; Environmental crisis; Individualisation and value pluralism; Digital age; Demographic change; Technological convergence (Vielmetter & Sell, 2014).
- Demographic change - ageing; Individualization - specialisation; Social and cultural disparities; Reorganization of healthcare systems; Changes to gender roles; New patterns of mobility (Hessel, 2014).
- Growing demand for scarce resources; Climate and biodiversity challenge; Accelerating technological change; Growing societal expectations for services, experiences; Emerging economies; Digitalisation; Ageing population (Hajkowicz, 2015).
- Emerging markets, consumption; Ageing population; New international economic order; Megacities; Emerging manufacturing hubs; Debt crisis; Trade dilemma (Biswas, 2016).
- Rapidly changing demographics; Rapid urbanization; Accelerating technological innovation; Power shifts; Resource scarcity; Climate change; Global health risks; Continuing economic growth; Ecosystem pressure; Increasing environmental pollution; Diversifying approaches to governance; Individualism; Economic interconnectedness; Public debt; Entrepreneurship rising; Technological convergence (Retief et al., 2016).
- Technology revolution; Biotechnology; Migration; Urbanisation; Social structures; Connected world; Shifting values; Transforming energy; Multi-polar worldview; Economic activity; Mobility; Global limits (Lustig & Ringland, 2018).
- Climate change; Health; Consumerism; Big data; Tech; Globalisation; Individualism; Wealth redistribution; Uncertainty and inequality (IPSOS, 2019).
- Digitalisation; Globalisation; Multi centric world; Democracy crisis (D. Naisbitt & Naisbitt, 2019).
- Globalisation; Digitalisation; Automation; Urbanisation; Migration; Ageing; Climate change; Resource scarcity (OECD, 2019).
- Individualism; Fluid gender identity; Instant knowledge vs. Wisdom; Revival of simpler experiences; Experience delivered by humans; Attention wealth; Purpose first in company operation; Big data access-ownership; Privacy vs tech (Bhargava, 2020).

- Climate change; Ageing; Globalisation; Financial capitalism; Technological change; De-globalisation (Boschetto Doorly, 2020).
- Speed of technological advancement; Flexible employment; Skills mismatch; Sustainable work; Globalisation; Ageing - workforce composition; Increasing inequality; Environment; Economic power shift; Urbanisation; Cross-border migration; Resource scarcity; Individualism (Linthorst & De Waal, 2020).
- Demographic trends and ageing; Urbanisation; Gender roles, women; Access to education; Health challenges; Household debt; Income inequality; Climate change; Environmental degradation; Eroding human security; Fragmenting trade; Environment; Public debt; Powerful firms; Internet of things; Automation; Artificial intelligence; New materials; Virtual reality (National Intelligence Council, 2021).
- Globalisation - Interconnectedness; Digitisation; Open access learning; Millennial and Gen Z expectations; Individualisation; Mental Health; Environmental awareness (Hieker & Pringle, 2021).
- Deglobalization and self-sufficiency; A New Cold War; Financial instability; End of easy money; Debt crisis; AI threat to work and consumption-based economy; Climate change; Demographic crisis (Roubini, 2022).
- Communication technology; Inequity; Individualisation; Shared experiences; Faith in political system; New world order; Hate on the rise; Missing middle; Tribes vs. Nations; End of privacy; Polarised science; Population redistribution; AI in entertainment; Gender; Cashless economy & universal basic income; Climate; Shopping; New luxury (Salzman, 2022).
- Digitalisation, internet of things, smart city; Artificial intelligence, automation; Urbanisation; Education, higher education; Big data; Globalisation; Climate change, sustainability; Autonomous vehicles (Jeflea et al., 2022).
- Globalisation; Integration; Democratisation (Lebedeva & Kuznetsov, 2022).
- Digitalisation; Urbanization; Globalisation; Climate change; Automation; Mobility; Global health; Ageing population; Emerging markets; Sustainability (Haluza & Jungwirth, 2023).

Many of these megatrends are not easily comparable. While different authors may use the same term to tag the megatrend, the description can be different (e.g., when writing about demographic changes, some authors emphasize the diverging paths of Africa and other continents, others primarily focus on ageing, and there are studies that mostly discuss urbanisation trends), Some studies discuss the same trends under one umbrella, others interpret them as separate megatrends (e.g., climate change, sustainability and the scarcity of resources). *Table 1* summarises the megatrends that were most frequently mentioned in the surveyed literature.

Table 1. The most frequently mentioned megatrends

| Megatrend | No. of mentions |
|--|-----------------|
| Shift of economic power, Emerging markets, New economic order | 11 |
| Digitalisation | 11 |
| Climate change | 11 |
| Demographic crisis | 11 |
| Globalisation | 10 |
| Accelerating technological innovation, Technological cohesion | 8 |
| Increasing individualism | 8 |
| Rapid urbanisation | 7 |
| Health challenge, Mental health | 7 |
| Socio-economic inequalities | 6 |
| Debt crisis, Indebtedness of households, Increase in public debt | 5 |

| | |
|---|---|
| Artificial Intelligence | 5 |
| Migration | 5 |
| Deglobalization, Trade reduction | 4 |
| Diversity of governance, Trust in the political system | 4 |
| Automation | 4 |
| New patterns of mobility | 4 |
| Scarce resources | 4 |
| Increasing environmental pollution, Reduction of biodiversity | 4 |
| Gender roles | 4 |
| Big data | 3 |
| Spread of consumerism | 3 |
| Environmental awareness | 3 |
| Change in education, Open access learning | 3 |

Source: author's own work

Data and methods

This study seeks to answer whether and how the elements of the Chinese grand strategy are connected to megatrends, and whether the grand strategy had any impact on global megatrends narratives. The first question is answered by comparing the literature review results on Chinese grand strategy and megatrends.

Answering the second question requires a trend analysis. I used the Google Trends database (<https://trends.google.com/trends/explore?date=all&hl=en>) to get quantifiable data on the frequency of terms whose narrative is connected to the two objects of analysis (grand strategy and megatrends). Google Trends provides aggregated data on the frequency of searches of any term that was entered to their search engine. Data is available from 2004 on a monthly basis, although the method was refined several times over the two-decade period. My calculations are based on the non-real time data, which means that the time period considered is 1 January 2004 and 12 November 2023. Google provides a monthly value for every search term; I used the mean of the 12 months (11 in case of 2023) to get a frequency figure for every year. Both country-level and worldwide data is available, this research uses the latter.

Google Trends normalises the data by calculating the search interest for a term as a proportion of all searches on all topics on Google. The normalised data are indexed to a 0-100 scale, where 100 represents the highest search interest for the period selected. The dataset I used therefore can only compare trends, the figures of different search terms are not comparable to each other (e.g., the frequency value of 'South China Sea' and 'climate change' is around 14 in 2023, but the actual search interest for climate change is magnitudes larger) (Rogers, 2016).

I collected and calculated yearly frequency data for 12 terms. The first three are meant to measure the narratives about China's grand strategy, the rest represent narratives about megatrends:

1. South China Sea
2. Belt and road initiative
3. Cyber sovereignty
4. Globalisation
5. Deglobalisation
6. Economic world order
7. Digitalisation
8. Climate change
9. Demographic crisis
10. Debt crisis
11. Forms of government

12. Scarce resources

To check the connection between terms describing the grand strategy and different megatrends, I compare the 12 time series. Several methods can be used to detect similarities between two time series. In this analysis, the important aspect of similarity is that two lines start to rise or fall at roughly the same time. When the detection of the combined rise and fall is an important goal (Bartha & Molnár, 2016), the use of the Pearson correlation coefficient is the most appropriate (Bader, 2021). The higher the value of the correlation coefficient, the more similar the two curves are to each other, indicating that the narratives about the two phenomena coincide. A negative correlations indicates that when one of the terms is on the rise, the other begins to decline.

Results and discussion

Table 2 evaluates the most frequently mentioned megatrends from the Chinese grand strategy perspective. It splits megatrends into three categories: driver, influencer, and impacted. Megatrends in the driver category are strongly affected by the Chinese grand strategy. The megatrends with the influencer tag can be influenced by Chinese developments simply because China is a major player in fields that contribute to the trend (e.g., tackling climate change is typically not categorised as part of the grand strategy, but China still has influence over it as the world's largest polluter (Myllyvirta & Qin, 2023)). The impacted category refers to megatrends that have significant impact on China.

Table 2. The most common megatrends and their connection to China and the Chinese grand strategy (Driver column)

| Megatrend | Driver | Influencer | Impacted |
|--|--------|------------|----------|
| Shift of economic power, Emerging markets, New economic order | Y | | |
| Digitalisation | Y | | |
| Climate change | | Y | |
| Demographic crisis | | | Y |
| Globalisation | Y | | |
| Accelerating technological innovation, Technological cohesion | | Y | |
| Increasing individualism | | | Y |
| Rapid urbanisation | | | Y |
| Health challenge, Mental health | | | Y |
| Socio-economic inequalities | | | Y |
| Debt crisis, Indebtedness of households, Increase in public debt | | | Y |
| Artificial Intelligence | | Y | |
| Migration | | | Y |
| Deglobalization, Trade reduction | Y | | |
| Diversity of governance, Trust in the political system | Y | | |
| Automation | | Y | |
| New patterns of mobility | | Y | |
| Scarce resources | Y | | |
| Increasing environmental pollution, Reduction of biodiversity | | Y | |
| Gender roles | | | Y |
| Big data | | Y | |
| Spread of consumerism | | | Y |

| | | | |
|---|--|--|---|
| Environmental awareness | | | Y |
| Change in education, Open access learning | | | Y |

Source: author’s own work

I will only focus on the Driver column of *Table 2*. If indeed it is China’s ultimate goal to replace the USA as the hegemon power (Doshi, 2021), the country is a direct driver of the ‘Shift of economic power, Emerging markets, New economic order’ megatrend, and this aim is directly connected to the ‘Globalisation’ and ‘Deglobalisation, Trade reduction’ megatrends, too. China is actively seeking to establish new standards in the areas connected to the digitalisation realm (Bracken et al., 2021; Mastro, 2022), while propagating the idea of digital sovereignty (Mandelbaum & Weiffen, 2023). These strategic moves make China an influencer of the ‘Digitalisation’ and the ‘Diversity of governance, Trust in the political system’ megatrends. China’s experience in controlling the cyberspace helps to increase the government’s control over the narrative, therefore the technology, if made available for other countries, can contribute to the strengthening of autocratic regimes. Finally, as Mastro (2022) highlights it, around half of China’s crude oil imports (the world’s largest energy importer) go through the Malacca straight, making the country vulnerable in the South China Sea and beyond. Access to scarce resources, such as crude oil (but rare earth elements, too (Zou et al., 2022) connects the ‘Scarce resources’ megatrend to the Chinese grand strategy.

I picked three terms that are meant to represent the most important components of the grand strategy in a narrative analysis: first, ‘South China Sea’ as this area seems to be a focus point in the Chinese national security strategy, and it is closely connected to the secure access to scarce resources, too; and the BRI and ‘cyber sovereignty’, because these are the most commonly mentioned grand tools of China’s grand strategy. Figure 1 shows the search interests of these terms. Both the ‘South China Sea’ and the BRI seems to have peaked in the second part of the 2010s, while ‘Cyber sovereignty’ has been rising steadily (the frequency values for this term are lower, because some large outliers were removed from the beginning of the period, 2004-2006).

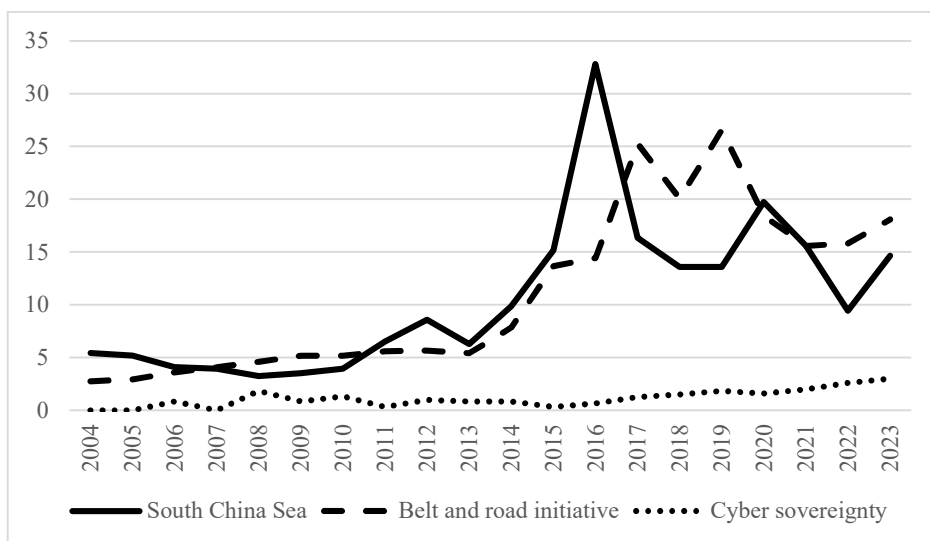


Figure 1. The narrative trends about the key elements of China’s grand strategy
Source: author’s own calculations based on Google Trends data

I also checked the Pearson correlation coefficients between the time series of these three grand strategy terms, and 9 other megatrends terms (*Table 3*). The table only includes coefficients if the correlation was significant at 5% level. ‘South China Sea’ is only correlated with

‘Globalisation’ and ‘Digitalisation’, which means that searches for these terms had a similar trend. ‘Belt and Road Initiative’ is correlated with ‘Digitalisation’ (strongest), ‘Scarce resources’, ‘Climate change’, and ‘Globalisation’ (weakest). Finally, ‘Cyber sovereignty’ is correlated to almost all investigated areas: ‘Digitalisation’ (strongest), ‘Climate change’, ‘Deglobalisation’, ‘Scarce resource’, ‘Economic world order’ (strong), ‘Demographic crisis’, and ‘Globalisation’ (weakest).

Table 3. The significant Pearson correlation coefficients of the three grand strategy terms

| Megatrend | SCS | BRI | CS |
|----------------------|---------------|---------------|---------------|
| Globalisation | <i>-0,491</i> | <i>-0,574</i> | <i>-0,474</i> |
| Deglobalisation | | | <i>0,759</i> |
| Economic world order | | | <i>0,726</i> |
| Digitalisation | <i>0,494</i> | <i>0,768</i> | <i>0,785</i> |
| Climate change | | <i>0,559</i> | <i>0,781</i> |
| Demographic crisis | | | <i>0,597</i> |
| Debt crisis | | | |
| Forms of governments | | | |
| Scarce resources | | <i>0,607</i> | <i>0,734</i> |

Note: SCS = South China Sea; BRI = Belt and Road Initiative; CS = cyber sovereignty

Source: author’s own calculations based on Google Trends data

10 of the 13 significant correlations (these are shown in italics in *Table 3*) are detected with Driver category megatrends, which I earlier identified as ones that can be strongly affected by the Chinese grand strategy. This can be interpreted as a sign of China, and China’s grand strategy having an impact on the global narrative.

Conclusion

This study identifies four possible components of China’s grand strategy: 1) building up military power, 2) consolidating power at the peripheries and pushing for more control over disputed territories, 3) expanding economic influence through the BRI, and 4) establishing new standards in digital technologies and promoting cyber sovereignty. I claim that these grand strategy components can act as drivers of the following megatrends: 1) Shift of economic power, Emerging markets, New economic order; 2) Digitalisation; 3) Globalisation; 4) Deglobalization, Trade reduction; 5) Diversity of governance, Trust in the political system; and 6) Scarce resources.

I pick the terms ‘South China Sea’, BRI, and ‘Cyber sovereignty’ as measures of the global narrative about the Chinese grand strategy. Using Google Trends data for the 2004-2023 period, I show that the narrative on the first two has peaked in the second part of the 2010s, while ‘Cyber sovereignty’ has been steadily rising. I also check whether these trends coincide with narratives about megatrends. I find that most of the significant correlations are with terms (namely: globalisation, deglobalisation, economic world order, digitalisation, and scarce resources) that represent megatrends which can be driven by decisions related to the grand strategy. This can be interpreted as a sign of China, and China’s grand strategy having an impact on the global narrative. Two megatrend terms, globalisation and digitalisation are correlated with all three measures of Chinese grand strategy. Scarce resources are correlated with two of them (BRI and Cyber sovereignty). These represent the three megatrends whose narrative is most closely connected to narratives about China’s grand strategy.

The quantitative part of this study is based on a trend analysis using Google Trends data. This quantitative part is speculative. It identifies some terms with the components of China’s grand strategy, other terms with megatrends, and checks if the time series showing search interests for

these terms are correlated or not. A significant correlation between two terms shows that the trends of two narratives (manifested in the form of search interest in Google's search engine) coincide.

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