Kalabalik!
Bulletin of the Swedish Research Institute in Istanbul

# A Place to Stand

The Anatolian Plate moves westwards. It is a slow but inevitable process, as became tangible in Istanbul on April 23 this year. We are still waiting for a major earthquake which is predicted to strike at the Prince Islands and conclude a cycle of seismic activities which began in Erzincan in 1939. Since then, a chain of violent ruptures along the North Anatolian Fault have gradually approached Istanbul, coming to a temporary halt after Kocaeli 1999 and raising concerns about the consequences for the metropolitan region of a city that has octupled in size in less than a century. The intervals between the last major Istanbul quakes – in 1894 and 1766 if we take a comparably smaller one into account, and 1766 and 1509 if we focus on the really big ones – are hardly reassuring when we consider the current timing, and especially not with the horrifying and still prevalent devastation of Antakya in fresh memory.

But tectonic plates pay no heed to statistics, urban planning, human psychology, or history; and as a research institute preoccupied with humanities and social sciences, we cannot pay heed to tectonic plates, either. We can merely observe the same safety precautions and protocols as everybody else while we go on, planning and working as if there still is not only a tomorrow, a next week or a next month, but a next year, and many years to follow. The spring has been no exception – crammed with activities, some of which have been long in the making, others of which have appeared on the agenda with shorter notice, unperturbed by movements on as well as inside the earth.

In late January, we presented the latest issue of *Dragomanen* to a local audience. The event was a first of its kind to take place in Istanbul; normally, our yearbook features articles in Swedish and we present it at an event in Stockholm. This issue, however, was a result of the project *Blind Spots*, initiated by our former cultural councilor Mike Bode with support from the Swedish Arts Council and in collaboration with three Turkish NGOs devoted to cultural heritage and urban environments. Featuring ten articles in English on architecture and urban planning in the early Turkish Republic, it felt logical to launch it in Istanbul, where not only Mike, but the two other editors Liana Kuyumcuyan and Murat Tülek are active. As for Stockholm, we presented the latest volume in our Transactions series, *Syrian Stylites*, at an event there in mid-February, arranged by our association of friends.

By the time, teaching of the course *Byzantium and the Baltic Sea: Urban Interfaces and Maritime Relations in Medieval Europe* had already started – not in one, but three countries: whereas it was announced at Uppsala University in collaboration with the universities of Lund and Stockholm, and with support from the Swedish USI network of universities and institutes for internationalization, it was scheduled to run parallel with similar courses at Koç University in Istanbul and the University of Patras in Greece. In late February, Swedish, Turkish, and Greek course participants met at the SRII for a week of joint exploration of Istanbul under the as always invaluable participation of David Hendrix from The Byzantine Legacy. The course had been in planning since 2022 – one of many spinoffs from the *Nordic Tales, Byzantine Paths* digital initiative for highlighting connections between the Eastern Mediterranean and Scandinavia – under the leadership of Christoph Kilger and Milan Vukašinović. Parallel with the course, we hosted a seminar on Homer in Byzantium with the Italian Schola Humanistica and the Austrian Academy of Sciences.

*David Hendrix with students from the* Byzantium and the Baltic *course*

*Simon Stjernholm together with student from Copenhagen University during the course* Religions in Turkey.

The USI network met in Athens in early March to discuss future collaborations. A week later, the three associations of friends of the Swedish Mediterranean Institutes arranged a day of public talks at the Military Museum in Stockholm, this time devoted to the Black Sea in history and legend, which will form the basis of this year's issue of *Dragomanen*. These and other commitments kept me abroad for almost two months, during which Anders was in charge of assisting with a number of events in Istanbul: the short course *Palestine Refugees and International Law* with Oxford University, the course *Religions in Turkey: Convergences, Conflicts, and Belongings* with Copenhagen University, the conference *Travelers in Ottoman Lands* with the British, American and Dutch institutes in Istanbul and Ankara, the panel talk *Managing Multilingualism: Officers, State Servants and Clergymen in the late Habsburg and Ottoman Empires* with the Austrian Cultural Forum and the German Orient-Institut, and the workshop Foodways to the *Divine: Faith and Food in the Middle East, North Africa, and Beyond*, again with the Orient-Institut.

By the time I was back in Istanbul, most of this year's scholarship holders and a few other visiting scholars had already arrived. During two seminars in mid-May, we learned about LGBTQ+ Muslims in Turkey, about the Hagia Sophia in the late Byzantine period, about Circassian identity and memory of the Russian ethnic cleansings in the 19th century, and about the middle-Byzantine clergy's influence on the emperor. I also had the pleasure of leading two city walks, which among other things explored the newly opened Zeyrek cistern and the wonderful new museum of Ottoman bath culture at the nearby Çinilici hamam. Last but not least, I got to take part in the excursion to the Yoros Fortress at Beykoz which concluded the Turkish part of the Byzantium and the Baltic course, led by Ivana Jevtic.


*Tamara Scheer's Keynote at* Managing Multinationalism in the Habsburg and Ottoman Empires*, a collaboration with the German Orient Institute and the Austrian Cultural Forum in Istanbul.*

Collaborations with the French (IFEA) and Dutch (NIT) institutes in Istanbul have also produced stimulating conferences: F*rontiers in the Umma: on the Sunni-Shii Borderlands in the Ottoman Middle East* at the end of May and *Connecting Constantinople: Objects, Empire, and Inter-Civic Relationality* in mid-June. The latter was coupled with the presentation of a new academic volume from Brill, *Constantinople through the Ages: the Visible City from Its Foundation to Contemporary Istanbul* (eds. Diederik Burgersdijk, Fokke Gerritsen and Willemijn Waal). In June, we also hosted the international conference *Global Diplomacy*, led by Lisa Hellman from Lund University; it was followed by a smaller network meeting in Global Humanities. We have further supported the annual meeting of the Ottoman Political Economies Network at the end of June and beginning of July.

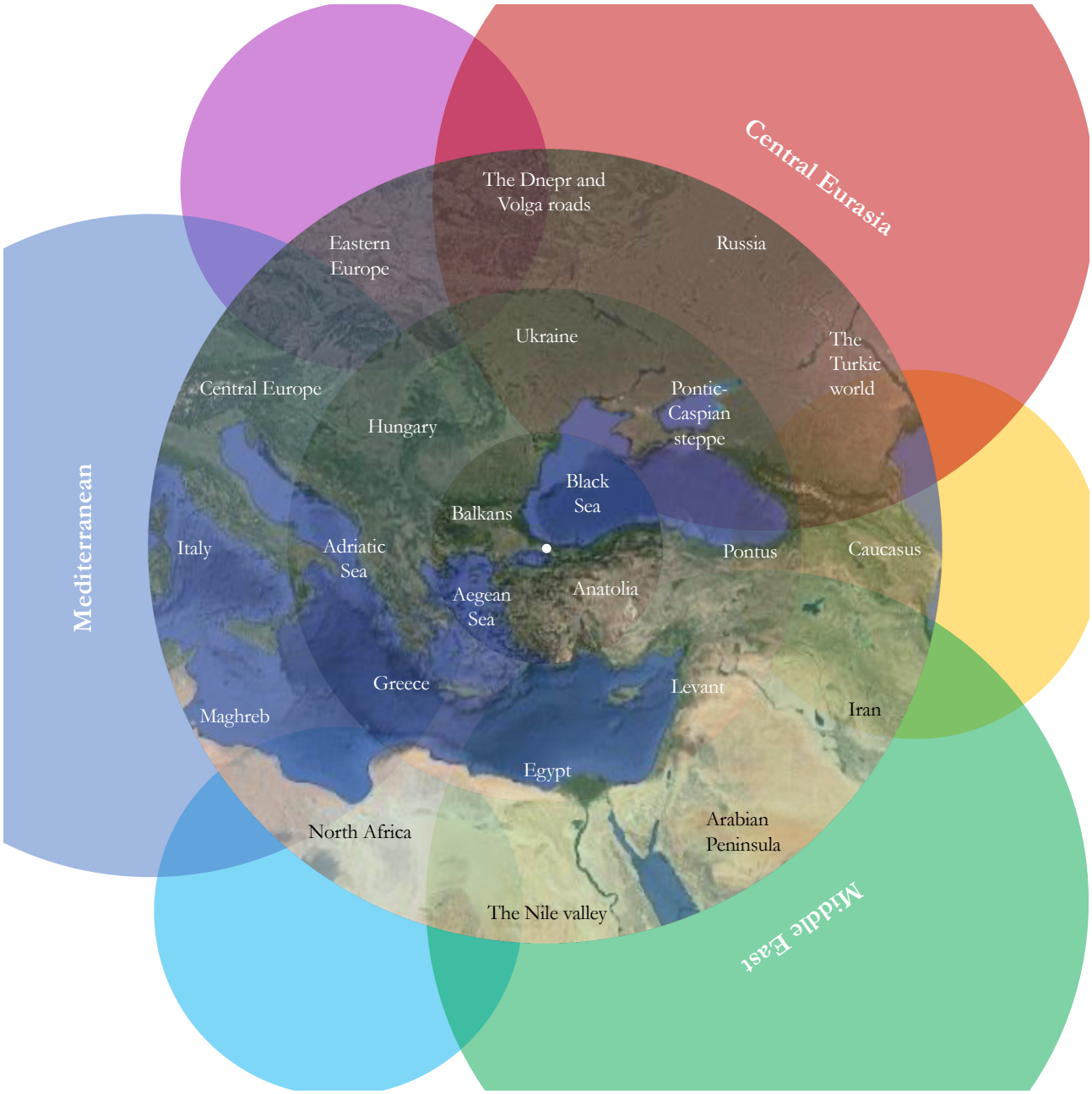
An event which in many ways had been particularly long in planning was the two-day conference devoted to Guillaume Berggren, which took place at the end of May at the SRII and the German Archaeological Institute. In fact, it is well over eight years since our colleagues from the latter approached us with the proposal to highlight their unique collection of Berggren's glass plates and photographs of the Anatolian Railway. Berggren was one of the most prolific and iconic photographers of the late Ottoman period, and his camera captured not only the rapid and fascinating transformation that Istanbul and Turkey underwent in his lifetime, but was in itself the exponent of a technological revolution and a globalizing world. On the second day of the conference, we had the privilege of listening to and watching Kerim Suner demonstrate the evolution of photography and the various techniques employed by Berggren.

Sadly, the end of the spring semester meant that we had to take farewell of our consul general Johanna Strömquist, who is heading back to Sweden. We can look back on two years of fruitful collaborations with the Consulate General under her auspices, and we look forward to resuming them under her successor Karin Hernmarck.

*Impressions from the Guillaume Berggren conference at the German Archaeological Institute – featuring original glass plates and prints – and the ensuing reception at the Swedish Palace, hosted by consul general Johanna Strömquist.*

Before we closed for the summer, the inventory of the SRII main library was finalized, and a new shelf placement and categorization system is now supported by a proper set of guidelines, developed in dialogue with librarians from Lund University. We stand in much gratitude both to them and to our intern Lovisa Jakobsson for the painstaking work with authors and titles in languages that not even the Libris catalogue had ever heard of.

While limited in volume, our main collection caters to at least ten major fields of study in the humanities and social sciences; we have opted to keep it that way, but taken a stricter approach to the geography it is supposed to cover. The institute already has an area-studies based collection: the Gunnar Jarring Central Eurasia library, which occupies the entire library room to the right from the entrance. Setting out from Istanbul, and staking out the institute's other areas of interest in a sequence of concentric circles, we have identified two further and complementary definitions – Mediterranean and Middle Eastern studies – to serve as a general guidance for the main collection, which fills the library room to the left.




*Istanbul at the center of three overarching (and several smaller) area studies: a guide to the SRII library profile(s).*

Both in scope and size, the library reflects the institute. The Mediterranean area is mainly present in books on archaeology and ancient history, the Middle East in books on contemporary religion and politics. Books on Byzantine and Ottoman history, art, and architecture mitigate the Classicist-Orientalist divide; books on language and literary studies act as a bridge to the Turkic and Iranian materials in the Jarring collection. Together, the three area studies identified above testify to an institute that has been shaped by all of them:

- In the late 1980s and early 1990s, under the leadership of Paavo Roos and Pontus Hällström, two archaeologists working on ancient Karia, the institute began to receive state support together with the two Swedish institutes in Athens and Rome – a Mediterranean connection which still persists, and which was re-emphasized when government funding seemed to waver in 2014.

- In the late 1990s and early 2000s, the directorships of the Arabist Bengt Knutson and the sociologist Elisabeth Özdalga brought contemporary politics, religion and society on the institute's agenda, and when the government considered closing down the Consulate General in 2000, the presence of a research institute with expertise on Turkey, Islam, and the Middle East became an important argument for preserving and even extending the Swedish presence in Istanbul.

- Turkology and Central Asian studies, which had been core subjects of research at the institute ever since its beginnings in the middle of the Cold War, gained renewed attention during Birgit Schlyter's time as a director 2012–14, when we received the Gunnar Jarring collection.

Art and architecture historians like Karin Ådahl and Johan Mårtelius, working with Persianate-Ottoman visual culture, and Byzantinists with an interest in literary reception like Ingela Nilsson and myself, have probably tended to gravitate to the city in the center of it all; and I personally think the map above highlights what a truly unique vantage point Istanbul offers. It is a research resource richer than any library: as Ture Arne envisioned more than a hundred years ago, an institute in Istanbul has the potential to function as a base for an incredible variety of researchers, students, projects and events in the humanities and social sciences. It can serve courses in contemporary Islam and Christianity as well as in ancient architecture and archaeology, individual studies of Greek and Roman inscriptions as well as of Arabic and Persian manuscripts, conferences on Byzantine and Ottoman art as well as on Syrian and Uzbek migrants, research projects about Pontic and Kurdish language varieties as well as about Turkish civil society and EU extension areas.

I think I speak for both Anders and me when I say that this diversity of subjects and activities is what makes our positions so incredibly rich and stimulating, even when their demands for multitasking and creativity may sometimes seem overwhelming and somewhat unrewarding for our own research interests. In terms of staff and resources, the SRII may be the smallest of the Swedish Mediterranean institutes, and among the smaller institutes in Istanbul, but we consider it of vital importance to maintain its identity as an interdisciplinary meeting ground as much as we can. Elisabeth Özdalga's reflections from her third year as director of the institute in 1999–2001 are as worth reading today as they were almost the quarter of a century ago:

> *It sometimes happens in Turkey when I introduce myself as the director of the Swedish Research Institute in Istanbul, that people ask: "Interesting, and what are you researching?" ("Siz ne araştıyorsunuz?"). That question is not entirely easy to answer ... The SRII is not a research institute in the sense that it heads its own research projects and has a research profile of its own; it is a research institute because it functions as a hub for researchers, whether individual researchers who use our facilities to conduct their research, or researchers who come together at a conference, seminar, or a course to present and discuss the results of their research.*
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> (*Dragomanen* 6:2002, 160–61)

Özdalga saw the potential of SRII to profile itself as a research institute with focus on Western or Central Asia, but added that it would require much more funding to keep permanent researchers. The problem remains the same today, with a government support that barely covers the costs of the facilities and the salaries of the administrative staff, the rest of our financial means coming from our users and their institutions. Bearing this in mind, I want to conclude this lengthy report with a few preliminary ideas for an uncertain future:

- Our identity as a Swedish Mediterranean institute is firmly anchored in our close relations with the other Swedish institutes in Athens and Rome as well as their associations of friends, in the shared Stockholm office, and in the USI network for course development. We can already look back on many fruitful collaborations and will always be happy to welcome new initiatives for the future.

- Currently, it looks as if the Danish Institute in Damascus considers reopening. If that actually happens, we are eager to explore closer relations with them and deepen the ones we already have with the Finnish Institute in Beirut, perhaps with the aim to form an group of Nordic institutes in the Middle East, where we would be the only one of its kind in Istanbul. Further synergies to consider in such a case are with the Swedish dialogue institute in Amman, the Swedish theological institute in Jerusalem, the Danish and Finnish dialogue institutes in Cairo, and the Nordic Society of Middle Eastern Studies.

- Finally, as we move on from our library's Mediterranean and Middle Eastern collection and prepare to ensure that Gunnar Jarring's Central Eurasia collection gets properly ordered, listed and catalogued, we see the latter as an increasingly crucial resource, unique among the local research libraries in Istanbul, to profile ourselves as a Central Eurasian institute in Turkey and internationally. To this end we stand in close dialogue with both Lund and Uppsala universities, which have both materials and expertise of relevance to our endeavor. But we are also curious to explore other ways of honoring Jarring's legacy – perhaps by initiating closer interactions between research, diplomacy and policy work on Central Asia.

By the end, it is up to geology, economy and politics to grant us a place to stand. If they do, we can move the earth.

Olof Heilo, director

*Concluding the spring term with a garden dinner for our local collaboration partners.*

# Womanhood in Ottoman Educational Discourses

*Badegül Eren-Aydınlık, Umeå University*

I am a doctoral student affiliated with the History and Education research group in the Department of Historical, Philosophical and Religious Studies at Umeå University in Sweden. My position is part of PEDASK (Schooling in Perspective: A Graduate School in Applied History of Education), an international graduate school launched in 2020 that brings together researchers from Sweden, Norway, and the Netherlands. The initiative aims to generate historical analyses with immediate relevance to current educational issues. Within this environment, my research is situated at the intersection of the history of education, women's studies, and print culture.

During my one-month research stay at the Swedish Research Institute in İstanbul (SRII), I had the opportunity to present my doctoral project at the SRII Research Seminar in June 2024. My presentation, titled "Educationalising Womanhood: Constructions of Female Subjectivities in Ottoman and Turkish Educational Discourse," sparked thoughtful engagement from an audience well acquainted with Turkey and its history, which was an encouraging and rewarding experience. The constructive questions and feedback offered during the seminar helped me reflect critically on my project and consider its broader implications.

My doctoral dissertation focuses on the education of women and girls in the late Ottoman Empire and early Republic of Turkey (1859–1933). Within the theoretical framework of educationalisation and gender, the project examines how conceptions of womanhood and female subjectivities were constructed through educational discourse. By engaging with diverse source material, including curricula of girls' and boys' schools, women's magazines and educational journals, the dissertation explores how official state discourses interacted with counter-public narratives surrounding women's education and societal roles. These entry points enable an analysis of both continuities and shifts regarding education and gender in the late Ottoman period until the early Turkish Republic, a time of rapid modernization and Westernization.

While many materials from the Ottoman period, particularly those in Ottoman Turkish, have been digitized and are readily accessible, early Republican sources written in modern Turkish remain largely undigitized. In this respect, my stay at SRII was especially valuable. I was able to conduct extensive archival work at IMM Atatürk Library, Beyazıt State Library, and the Women's Library and Information Centre Foundation. These visits enabled me to review a wide range of educational and teacher journals, as well as women's magazines from the early Republican period – sources that are central to my research but otherwise difficult to access remotely.

Equally important were the scholarly exchanges and informal conversations that took place during my time at the institute. I had the chance to meet and engage with prominent historians of education, whose insights and suggestions helped me develop the analytical focus of my work.

One particularly inspiring moment occurred during a coffee break conversation with Olof Heilo, which sparked the idea for a future research project on the travel of Swedish physical education to Turkey in the early twentieth century, and its reception in both contexts. This research direction has the potential to develop into a postdoctoral project, extending the themes of my current research into new comparative and transnational directions – an exploration I have already begun with a short article in Swedish, which is also my first academic publication in the language.

Overall, my research visit to SRII was intellectually enriching and profoundly productive. It contributed significantly to the progress of my doctoral project while also opening up new avenues for future research. I am deeply grateful for the support, resources, and collegial environment provided by the institute.

# Syriac-speaking borderlands between Byzantium, Persia and the Caliphate

*Leif Inge Ree Petersen, Norwegian University of Science and Technology, Trondheim*


While Syriac-speaking Christians now form a tiny minority in Tur Abdin and a few other places in Turkey, their heritage is formidable. Their parent language, Classical Syriac, was the late antique Aramaic dialect of upper Mesopotamia, which became the literary, liturgical and administrative language of Aramaic-speaking Christians throughout of the Middle East throughout the Middle Ages, and remains in use by various Syriac, Assyrian and Chaldean churches today. While other dialects of the language co-existed with Syriac, such as Talmudic (Babylonian and Tiberian) Aramaic, Mandaic, Samaritan and Christian Palestinian Aramaic, Syriac has by far the largest surviving Aramaic corpus spanning the from the fourth through the ninth centuries AD and beyond, when it slowly began to be replaced by Arabic.

During its formative period in late antiquity, the great cultural centers of Syriac Christianity in present-day Turkey (Türkiye) were located in Edessa (Urfa), Amida (Diyarbakir) and Nisibis (Nusaybin) as well as the cities, villages and monasteries of Tur Abdin, where a handful of monasteries and Syriac-speaking villages still remain. The Syriac-speaking world stretched across the Fertile Crescent all the way to Syria and Palestine in the southwest and Mesopotamia and Qatar in the south-east. This means that all of Persian Mesopotamia under the Sasanian Dynasty was largely Syriac-speaking. In addition, the Church of the East (also called "Nestorian") with its base in the Sasanian capital Ktesiphon administered a vast network of missions and bishoprics throughout Asia, reaching the Steppe and Tang Dynasty China. The result is that many steppe empires had writing systems derived from the Syriac alphabet, including medieval Uyghur and Mongolian up to the present day.

Scholars of early and medieval Christianity, early Byzantium, the Sasanian Empire, early Islam and Semitic philology have long used Syriac sources, but often Syriac has served as an auxiliary language to those working on larger empires and more famous civilizations. For instance, high medieval Syriac chronicles such as those Michael the Syrian (from 1199) and Barhebraeus (d. 1286) are well known due to their utility to Crusade historians. Outside the realm of specialists, the corpus of Syriac literature remains little known outside specialist circles despite its fundamental importance in world history. Perhaps most famously, most of the translators of classical Greek works of philosophy, technology and medicine to Arabic during the Golden Age of Islam and most of the practicing doctors were in fact Syriac-speaking Christians. They mastered the classical Greek corpus via a continuous tradition stretching back to Byzantine times, frequently translated the classical texts into Syriac first, and used the Syriac translations to develop an abstract philosophical and technical vocabulary when translating into the related Arabic.

Due to their geographical spread, Syriac-speakers and writers were always positioned astride geopolitical and cultural borders. In late antiquity, the Roman/Byzantine-Persian frontier from 224 to the 640s ran straight through Syriac-speaking upper Mesopotamia, and the important centers of Syriac culture frequently shifted between the empires over the centuries. Much of our knowledge of both conflict and cooperation between the empires thus come from Syriac sources, while Syriac-speakers themselves were fundamental conduits of cultural exchange. With the Arab conquests, the core of the Syriac-speaking world became subsumed under the Islamic world, but the frontier between Byzantium and the Caliphate sat right on the northern edge of the Syriac world, so that Syriac-speakers again formed a substantial part of the frontier population on both sides. This is evident in the Syriac sources which are very concerned with Byzantine-Islamic relations and the effect it had on local populations. The frontier of Byzantium and the Caliphate was for centuries one of the great cultural-political divides in the world and has received significant attention in scholarship. Notable studies exist on, e.g., frontier warfare[1], settlement and economy based on archaeological surveys[2], and ecclesiastical organization[3].

However, some of these studies are quite dated, and much is still unknown about the life, economy, social structure and political role of the people(s) along the frontier. Their lives were often affected by warfare, but straddling the divide they also formed a cultural, political and religious bridge between the Caliphate's territories and Byzantium. Particularly the Syriac- and Armenian-speaking populations from northern Syria through upper Mesopotamia to eastern Anatolia and the western Caucasus often belonged politically to the Islamic world, but descended from a common political, cultural and socio-economic community formed by the late Roman/early Byzantine empire until the early seventh century, and retained a distinct religious, cultural and demographic make-up that only began to change substantially under the Abbasids and later.[4] The early Caliphate's relationship with the local population ranged from cooperation to coercion according to military and circumstances as well as their own internal struggles.[5]

While some of this is known from narrative sources, particularly Greek and Arabic, that have long been known and form the backbone of some of the studies noted above, the field has been greatly assisted by considerable source critical, historiographical and textual advances. Syriac and Armenian chronicles, Acts of councils (from the Council of Dvin to the Sixth Ecumenical Council and the Quinisext Council), responsa in Greek and Syriac, in addition to a rich corpus of hagiography and apocalypses, have greatly enriched our understanding of the seventh century and beyond.[6] The traditional account of Islam found in the late Arabic sources have been reexamined and set in their late antique context.[7] Syriac (and Armenian) sources are now regarded as indispensable correctives to the traditional accounts from metropolitan areas of Byzantium and the Caliphate, even if they are still somewhat underused. In addition, a number of new editions, studies and translations of crucial texts have only recently become available. The lives of Theodotus of Amida and St Simeon of the Olives are among the most important texts to have been edited and translated only in the last few years.[8]

These texts describe the activities of holy men active in upper Mesopotamia in the late seventh and early eighth centuries, respectively, including a great deal of evidence on their socio-economic, cultural and political contexts which have hitherto been unknown or unused by historians.[9]

Promising topics for further research include that have already yielded preliminary results – including a very useful tour of the area from Diyarbakir to Urfa organized by the Swedish Institute in May 2024 – are: 1) military organization and defense; 2) political loyalty and identity; 3) the role of secular and religious elites; 4) economic organization and prosperity; 5) the fate and role of captives, slaves and concubines.

- While the role of the militarized Armenian nobility is fairly well known from existing historiography and sources, next to nothing has been written about the military role of Syriac-speaking populations in upper Mesopotamia and northern Syria on the Byzantine-Islamic frontier; most studies only deal with the rebellious Mardaites/Jarajima in Lebanon known from the Greek and Arabic Chronicles. However, it seems that the Christian population in Tur Abdin, for instance, were capable of controlling significant territory, organizing military forces, and were used by the Umayyads and early Abbasids to defend cities, supply craftsmen, supplies and equipment for sieges, and even recruits for military campaigns. They also seem to have used surviving late Roman/Persian practices and defensive infrastructure, which will require familiarity with the terrain and sites in question; for instance, in Tur Abdin and the surrounding area, there are numerous late Roman/early Byzantine fortifications which still can be visited. Indeed, the continuous tradition of Syriac craftsmen constructing fortifications and siege equipment stretch back to the Byzantine-Sasanian wars of late antiquity and must have been deliberately maintained under the Caliphate.[10]

- The loyalty and political identity of frontier populations remains an unexplored problem, but sources clearly indicate much cross-frontier migration and contact with Byzantine military authorities, who vacillated from treating their co-religionists kindly to raiding their villages when at war with the Caliphate; some were deported and used on the Bulgarian frontier, where they founded new cities, built new fortifications, and introduced cultural practices and religious beliefs from the east. An interesting fact is that both Byzantium and the Caliphate experienced seismic internal conflicts during which refugees, collaborators, exiled elites and impoverished frontier populations would move across the frontier, making it a rather porous conduit of political, socio-economic and cultural contacts.

- The landowning classes that descended from the late Roman/early Byzantine equivalents clearly played an important role in local, communal organization, alongside the better attested holy men and ecclesiastical institutions, but their connections to both the Caliphate and Byzantium remain murky, as well as any possible military role.

- Due to such elites (at least as a working hypothesis), parts of the frontier region remained prosperous and productive despite obvious military challenges. For instance, it provided great income to a new Muslim elite that began to heavily invest in upper Mesopotamia in the Abbasid period but they must have built on a long tradition of dynamic agricultural management which is only partly explored with emphasis on ecclesiastical foundations.[11]

- Finally, the detrimental effects of war must be taken into account; much devastation was caused to specific regions due to intermittent warfare, resulting in deportation, captivity, slavery which is described in the councils, chronicles, responsa and some other sources, but which have still not comprehensively been studied, nor their relevance for the other topics above (loyalty, identity, economy).

1. R.-J. Lilie, *Die byzantinische Reaktion auf die Ausbreitung der Araber. Studien zur Strukturwandlung des byzantinischen Staates im 7. und 8. Jahrhundert*. Munich 1976; J. Haldon and H. Kennedy, The Arab-Byzantine Frontier in the Eighth and Ninth Centuries: Military Organization and Society in the Borderlands. *Zbornik Radova Visantoloskog Instituta* 19, Belgrade 1980, 79-116.

2. A. Eger, *The Islamic-Byzantine Frontier: Interaction and Exchange Among Muslim and Christian Communities.* I.B. Tauris 2014.

3. A. Palmer, *Monk and Mason on the Tigris Frontier: The Early History of Tur ʿAbdin.* Cambridge 1990.

4. J. Tannous, *The Making of the Medieval Middle East: Religion, Society, and Simple Believers*. Princeton 2018.

5. R. G. Hoyland, *In God's Path: The Arab Conquests and the Creation of an Islamic Empire. Oxford, 2014.*

6. R. G. Hoyland*, Seeing Islam As Others Saw It: A Survey and Evaluation of Christian, Jewish and Zoroastrian Writings on Early Islam.* The Darwin Press 1997; J. D. Howard-Johnston, *Witnesses to a World Crisis: Historians and Histories of the Middle East in the Seventh Century.* Oxford 2010.

7. S. Anthony, *Muhammad and the Empires of Faith: The Making of the Prophet of Islam.* UCL Press 2020; H. Kennedy, *History of the Arab Invasions: The Conquest and Administration of Empire: A New Translation of al-Baladhuri's Futuh al-Buldan*. Bloomsbury 2022.

8. R. G. Hoyland and A. Palmer, *The Life of Theodotus of Amida: Syriac Christianity under the Umayyad Caliphate*. Gorgias Press 2023; R. G. Hoyland, S. P. Brock, K. B. Brunner & J. Tannous, *The Life of Simeon of the Olives: An entrepreneurial saint of early Islamic North Mesopotamia*. Gorgias Press 2021.

9. The most significant study based on the as of yet unedited manuscripts is Andrew Palmer, *Monk and Mason on the Tigris Frontier: The Early History of Ṭur ʿAbdin*. Cambridge University Press 1990.

10. L. I. R. Petersen, *Siege Warfare and Military Organization in the Successor States (400-800 A.D.): Byzantium, the West and Islam*. Brill 2013; L. I. R. Petersen, *Christian insurgencies against the early Caliphate. Civil Wars* (in print).

11. Palmer, *Monk and Mason*.

# The Many Lives of Hagia Sophia

*Stephanos Efthymiadis, Open University of Cyprus*

For any Byzantinist, a journey to Istanbul and a month-long sojourn in this modern metropolis qualifies as a splendid opportunity to visit and study the monuments of the city, discover the remnants of its pre-Ottoman past and familiarize oneself with the different aspects of its hectic modern life. For a Byzantinist such as myself, whose major endeavor for quite a few years now has been to produce a monograph on the political and social history of Hagia Sophia, spending an entire month in Istanbul as a fellow at the Swedish Research Institute (SRII) undoubtedly helped to advance my research on this project and allowed me to share ideas and enthusiasm with colleagues with whom I might not otherwise have become acquainted.

After two fellowships at Dumbarton Oaks Center for Byzantine Studies (in 2018 and 2024), I was privileged to be awarded a third devoted to the study of the monument that best symbolizes Byzantium, this time in the Great City itself. My associations with Scandinavian Academia initiated in the 1990s thanks to subsequent invitations I received by the late Tomas Hägg, professor of Greek at Bergen University and famous Hellenist.

I had the opportunity to give seminar lectures in Norway and act as an opponent in the defence of two dissertations produced by younger colleagues. A closer association with Swedish Academia in particular came about in the years I served as a member of the advisory board of the series of Studia Byzantina Upsaliensia (2014–2021), and then as the main opponent of a doctoral thesis defended in Uppsala University in September 2021. In more recent years my collaboration with the Uppsala scholarly environment has had a more a broad reach since, following an invitation by my colleague, professor Ingela Nilsson, I joined the advisory board of the long-term project 'Retracing Connections'. The core of this project is the Life of St Theodore of Edessa, a text surviving in many versions. Now that the project is about to be completed, I shall act as the reviewer of the edition, translation, and annotation of the Greek version, what will make up the first and lengthy volume produced under the auspices of the project.

After staying at and working in the Institute for an entire month I was able to enlarge the scope of my research on the political, social and urban history of Hagia Sophia of Constantinople and extend its chronological limits (1204–1453), pushing its end date from late Byzantium to the first years after the Ottoman conquest of the city. Locating primary sources and secondary bibliography referring to the critical period of transition that was the mid-fifteenth century was largely achieved through hours of study in the library of the Institute and by consecutive visits to other libraries and museums in the Beyoglu district.

The varied character of the primary sources dating from the Byzantine period and after the fall of Constantinople in 1453 can tell us much; firstly about Hagia Sophia's function as a papal church in the last months of the empire and then about the process of its conversion into a mosque immediately after the Ottoman conquest of the city. Preserved in Greek, Latin and Ottoman Turkish, these sources allow us to perceive the different angles and perspectives from which the imposing holy edifice of Constantinople was viewed and explored by those who controlled and/or visited it in these critical years.

I had the opportunity to present the basic goals of my research on Hagia Sophia in a seminar paper that I delivered before fellows and friends of the Institute on Wednesday, 14 May 2025. The title of my talk was 'The last period of Hagia Sophia as a Christian monument' and the periods that it covered were the Latin occupation of Constantinople (1204-1261), when Hagia Sophia was converted into a papal church, the decades after the reconquest of the city by Michael VIII Palaiologos in 1261, when Hagia Sophia was reconverted into a patriarchal church, and the final, short period prior to the 29th of May 1453 when its status as a papal church was restored. (In December 1452, Emperor Konstantinos XI Palaiologos proclaimed the Union of the Churches within its sanctuary). The ensuing discussion was extremely helpful in clarifying several points of my presentation and providing the necessary feedback to revise the original plan for the arrangement of my book and improve some arguments to be presented in the relevant chapters.

Equally important for my work was attending a conference on 'Istanbul During the Reign of Sultan Mehmed the Conqueror: Construction and Housing' organised by Fatih Sultan Mehmet Vakıf Universitesi at the end of May 2025. The conclusion of the conference allowed for a long visit to Ayasofya's upper galleries guided by Prof. Dr Hasan Fırat Diker, the scholar who oversees the restoration and conservation works in Ayasofia. The whole tour was extremely informative, as, on the one hand, we found out a lot about the ongoing project of keeping the edifice stable and 'immune' to earthquake damage and, on the other, we learnt about some particularities of the Justinianic building that the modern visitor can still observe. For my part, the visit extended to tracking down some graffiti that I had not been able to locate in my previous inspections of Hagia Sophia's galleries and to discovering some details in them that might be significant for my undertaking. Graffiti add to our understanding of social history and are important for reconstructing the ethnic and social identity of some of Hagia Sophia's 'Medieval' visitors, especially the ones from the last centuries of Byzantium.

By and large, the activities described above were geared towards sharing information and knowledge on the focus of my current scholarly endeavour, Hagia Sophia of Constantinople. Nonetheless, the month I spent at the Institute was instructive and fruitful in many other respects. To begin with, the compound of the Swedish Consulate was the starting point for two important visits to historic monuments and places situated within the confines of the Byzantine and Ottoman imperial capital. On two Friday afternoons a group of five to seven people, led by the director of the Institute, walked through neighborhoods and districts of the old city and had the real pleasure of long sightseeing tours. In the first of these tours, we strolled through the Grand Bazaar, ending up at Küçük Ayasofya Camii, i.e. what was once the church of Sts Sergios and Bacchos, visiting in between several other interesting sites. Our long walk was concluded with a visit to the Nakilbent Cistern, accessed through a carpet shop, and to At Meydan, i.e. the square of the Hippodrome with its standing monuments across the way from Hagia Sophia. In our second tour we explored the large area extending from Kalenderhane Camii (the former Theotokos Kyriotissa) to Zeyrek Camii (the former Monastery of Christ Pantokrator), before visiting the imposing Fatih Camii (the former church of the Holy Apostles) and walking through the narrow streets of Fener and Balat that nowadays attract crowds of tourists. Our eye was caught by the red-brick building of Fener Rum Erkek Lisesi, the most prestigious Greek Orthodox School of the city.

For both these tours we were thankful beyond words to Olof Heilo whose admirable knowledge of and passion for the history of Constantinople-Istanbul made him the ideal guide and instructor for all of us. I could certainly not have got all that I personally learned from listening to and talking with him by confining myself to getting knowledge and ideas by studying books. Olof Heilo was the host of other seminars with papers delivered by fellows in the Institute. I attended them and always appreciated the research questions that they treated and the glimpses they offered of various facets of life in contemporary Turkey/Türkiye. The same positive experience I had attending the workshop devoted to the Swedish photographer Guillaume Berggren and entitled "The Late Ottoman Empire through the Lens of Guillaume Berggren (1835–1920)".

Last but not least, I should mention a trip, or rather an expedition, that will long remain in my memory. I travelled with a team of fellow Byzantinists and graduate students from Koç University to the small harbour of Anadolu Kavağı, at the northern end of the Asiatic coast of the Bosphorus. Under the burning sun, we climbed the hill to reach the castle of Hieron overlooking the Third Bosphorus Bridge (Sultan Selim bridge) and the entrance to the Black Sea. Hieron still bears the traces of its Byzantine construction and use, especially during the period of the Palaiologan dynasty. Our precious guide on this marvellous visit was David Hendrix, the well-known creator of the 'Byzantine Legacy' website and a most generous person, keen to share anything that can be of interest to any student of Istanbul's Byzantine and Ottoman past.

I left SRII and the city on the first of June with a rich stock of knowledge and experiences chiefly due to the people I had the opportunity to meet and talk with, the monuments that I visited and the seminars and venues that I attended. My stay permitted me to meet colleagues (both Byzantinists and non-Byzantinists) and enjoy long talks on subjects that revived my curiosity on things Byzantine and, more significantly, allowed me to envisage with fresh eyes the 'potential' of the Great Church (i.e. Hagia Sophia) as a hub of the Byzantine capital, its topography and place in the cityscape. In the short run, this was a great help to me in writing most of what will be the introduction of my monograph on Hagia Sophia, parts of which I subsequently presented in the lecture I delivered as a keynote speaker at the Twentieth Conference of the Spanish Association of Byzantine Studies held in Valencia in early June. In the long run, working in the friendly environment of the Institute, I learned a lot about Swedish academia and Swedish culture at large, which I take to be an asset that will encourage further scholarly collaborations, far beyond those that I have been fortunate enough to have established in my career up to now.

# Chasing the Red Apple: Turkey's Quest for Strategic Autonomy*

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**The red apple (Tur. kızıl elma), among the most prominent symbols of Turkish nationalism, has been used since the Ottoman period for describing Turkey's pursuit of autonomy and global power. Referring to the Turkish army's prowess, President Erdoğan often uses the symbol of the red apple, a symbol also used by the defence industry when alluding to the quest for strategic autonomy. Tellingly, the Turkish defence company Baykar has named its flagship product, a drone, the Kızılelma. During Erdoğan's recent years in power, the country's quest for strategic autonomy, the pursuit of a modern-day red apple, has intensified. Based on document analysis and interviews with defence experts in Turkey, this study describes what strategic autonomy currently means in a Turkish defence context. Developments in Turkey's local defence industry, with a focus in the period after 2016, are the indicator chosen for evaluating how close Turkey has come to attaining the goal of strategic autonomy.**

Turkey's relations with NATO are shadowed by a reliability crisis. NATO often views Turkey as an unreliable partner, as when NATO chose to expand a military base in Romania for operations in the Black Sea instead of expanding the existing Çorlu airbase in northwestern Turkey, built for this kind of contingency. For its part, Turkey is not certain that NATO would activate Article 5 and defend the country if attacked, as government representatives often claim with respect to PKK insurgencies. Turkish strategic autonomy should thus be viewed as both resulting from and enhancing this trust deficit between Turkey and NATO.

In the name of strategic autonomy, Turkey has acted in ways that seem to be in conflict with the country's role as a NATO ally. Some examples are particularly illustrative: Turkey's purchase of the S-400 air-defence system from Russia in 2017, Turkey's unilateral interventions in Syria and Libya, and its hedging in the Ukraine-Russia war as well as during the escalation of the Iran-Israel conflict in 2024. Thus, concerns have been raised about the nature of strategic autonomy as a pulling force, whether acquiring strategic autonomy will lead Turkey to increasingly act as a solo player and, consequently, whether expanding strategic autonomy for Turkey means a shrinking potential for cooperation between Turkey and NATO.

Divisions within NATO and the transatlantic community widen the latitude for Turkey to act independently and seek strategic autonomy.[1] Breaking down the strategic autonomy concept is timely for understanding Turkey's ambitions in the future.

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Hereafter, a short overview of the strategic autonomy concept is followed by an analysis of how it is reflected in the country's defence industry.

## Strategic autonomy in the context of Turkish defence

The strategic autonomy concept is not as thoroughly developed in Turkey as it is in France or India. When referred to in a defence context, both official documents and academic papers use various terms interchangeably.[2] Since the end of the 1990s, Turkey has not published a white paper on defence or a revised military doctrine.[3] The effects of the concept become visible, however, in various parts of the Presidency's Strategic Plans, which in turn lead defence developments in the country.

Strategic autonomy for Turkey translates into the ability to, when necessary, act independently in various domains of defence and security policy. This firstly entails the ability to independently analyze and assess the country's threat landscape. Secondly, it entails maintaining advanced military capabilities, which the country could set in motion for protecting its national interests. Consequences of the latter are the will to (a) diversify procurement channels, and (b) increase the ownership in the country's most critical defence industries.[4]

The purpose of developing strategic autonomy in Turkey is twofold. On the one hand, it gains leverage for Turkey vis-à-vis its Western allies for integrating the country into the EU's defence architecture and military-industrial complex, as well as for gaining a larger space in the transatlantic community. On the other hand, it enables Turkey to act unilaterally when the country's national interests are not protected through the alliances it is a member of.[5] That can more easily be conceptualized as *relative* strategic autonomy since the country does not aim for full independence (i.e., absolute strategic autonomy), which would jeopardize the former purpose. Considering Turkey's limited material capabilities, aiming for relative strategic autonomy is a more realistic goal.[6]

From Turkey's perspective, increasing strategic autonomy does not conflict with collective defence, nor is it a force that intrinsically drives Turkey away from NATO.[7] However, the geopolitical leverage that Turkey gains by strengthening its military capabilities facilitates a higher degree of independent action. This can affect NATO's view of Turkey as an ally, and thereby harm the cooperation potential of Turkey with its traditional allies.

## Strategic autonomy in Turkey's defence industry

Strategic autonomy is reflected in the defence industry's technological efforts. Two factors accelerated Turkey's desire to develop its defence industry: the arms embargo imposed on Turkey after the invasion of Cyprus in 1974 and a shift from perceiving the Soviet Union as the main threat to Turkish sovereignty to focusing on internal security threats and the fight against the Kurdistan Worker's Party (PKK) in the 1980s.[8] Western allies reacted negatively to Turkey's efforts against the PKK, resulting in periodic suspensions of arms sales. Both of these factors highlighted the fact that Turkey could not meet its arms needs for securing its strategic priorities, especially when those were not in line with the priorities of Turkey's allies. The need to build up military capabilities that would facilitate acting without having to endure the limitations of external powers became prominent again after the Arab Spring uprisings reached Syria. Turkey had a failed state on its border, where the United States suppor¬ted PKK-affiliated Kurdish militia groups fighting the Islamic State (ISIS) yet refused to sell air-defence systems to Ankara. This reinforced Turkey's desire to seek alternatives for ensuring sufficient military capabilities. After the failed coup in 2016, this desire turned into an assertive quest for strategic autonomy and has been accompanied by militarization and interventionism.[9]

For Turkey's military operations in Syria from 2016 to 2020, the armed forces relied on indigenous weaponry. Although the operations were deemed successful, they highlighted the remaining shortcomings of the local defence industry, mostly regarding Turkey's proxy-warfare capabilities and operations in hybrid-warfare battlegrounds like that of Syria.[10] That entailed challenges in defending ground forces against anti-tank guided missiles and aerial platforms from man-portable air-defence systems.[11] The embargoes that Western allies imposed on Turkey in response to these operations exacerbated the industry's shortcomings.[12] Recent events, such as Germany's export license restrictions in 2021, which halted Turkey's battle-tank production, have catalyzed the government's will to prioritize efforts towards attaining strategic autonomy.

Strategic autonomy is a central driver for building a Turkish defence-technology industrial base that is increasingly indigenous and becoming more self-sufficient in critical systems and sub¬systems. In defence industry terms, strategic autonomy amounts to self-sufficiency. Some turning points, described below, gave rise to a quest for self-sufficiency during Turkey's defence industrialization process. Following a brief summary of these turning points, the development of Turkey's procurement strategy since 2016 is described. A consideration of the indicators of the defence industry's self-sufficiency is succeeded by an evaluation of how well Turkey has approached the goal of strategic autonomy.

## From off-the-shelf to gradual coproduction efforts

From producing small arms and ammunition in the early republican era, Turkey initiated off-the-shelf procurement to modernizing its capabilities. It had halted efforts to boost the local defence industry until the mid-1960s. Yet, between the 1960s and the 1970s, aiming to build power-projection capabilities with regard to crises in Cyprus, it initiated indigenous programmes to strengthen its naval forces. The 1974 US embargo boosted the desire for indigenous production of critical components and strengthening the maintenance network of purchased equip¬ment. Considering off-the-shelf procurement and even technology transfer, Turkey made efforts to diversify its resources. It entered into negotiations with the United Kingdom and Italy in aviation programmes, and began submarine coproduction cooperation with Germany, along with the purchase of German frigates and missiles. During this period, companies such as ASELSAN were founded and later led defence industry developments in the country.[13]

From the 1980s on, the private sector was encouraged to become involved in the defence industry and to initiate cooperation with foreign actors. This paved the way to focussing on technology transfer and joint-venture models, moving Turkey's defence industry efforts away from relying on off-the-shelf procurement. The creation of the Undersecretariat for Defence Industries (Savunma Sanayii Müsteşarlığı, SSM) in 1985 concentrated these efforts and placed them under the country's political leadership. This gave the country's leadership an influential role in defence-industry matters.[14] Until the end of the 1990s, Turkey experienced domestic turbulence related to the PKK insurgencies, and defence industry issues were politicized and embedded in the country's foreign-policy priorities. Thus, Turkey saw its involvement in multinational programmes as an escalation of its joint ventures and an additional layer for securing procurement. Turkey then joined programmes such as the European Future Large Aircraft and initiated coproduction with foreign companies. The so-called "postmodern coup" in 1997 again brought the SSM under the military-controlled defence ministry, which until the Justice and Development Party (AKP) came to power, favored off-the-shelf procurement.[15]

## AKP's focus on an indigenous development model

Efforts to increase the defence industry's self-sufficiency continued in the 2000s, with some shifts in direction. Continuing to prioritize local defence-industry involvement, the AKP government emphasized indigenous solutions and techno-logical autonomy in order to circumvent foreign actors' resistance to sharing sensitive and cutting-edge technology. An indigenous-development model was then favored over joint production.[16] Thus, the AKP's first decade in power saw large investments in local programmes, including the Altay battle tank, the ANKA drone and the MİLGEM corvette, as well as the cancellation of programmes that would require off-the-shelf procurement from foreign suppliers.[17] During this time, initiatives were also taken to nationalize joint ventures.

In the second half of the 2000s, local subcontractors gained more influence in procurement programmes, and focus was placed on building major platforms with as many locally produced subsystems as possible. This procurement model, referred to as the "unique design model," expanded the production of land vehicles, infantry weapons, intelligence systems and command-and-control communications.[18]The fact that indigenization began on a major platform level and not on a component level benefited local capacity-building and the defence industry's prospects for becoming a system integrator.[19] The development of the TB2 drone is illustrative. The fact that the drone can be equipped with different electrooptical systems (from the Canadian Wescam to the Turkish ASELFLIR-600) or none at all (i.e., the recipients purchase the electrooptical system independently) endows the industry with great development and manufacturing potential. It also reduces dependence on a single supplier of components. The national warship programme (MİLGEM) is similarly illustrative. Through MİLGEM, Turkey locally designs, builds, and equips sur¬face combatants, ranging from corvettes to destroyers. Turkey has exported different versions of the MİLGEM, for example to Ukraine and Pakistan.[20] These platforms are equipped with electronics and weapon systems that are different from those operated by the Turkish navy. This creates opportunities for advanced modification and integration within the industry.

This procurement method, which emphasizes indigenous solutions and the manufacture of uniquely designed platforms, broadens a country's potential for both international cooperation and export.[21] Indeed, the industry's gradual indigenization during the 2000s did not result in Turkey's withdrawing from inter¬national collaborations. Although, apart from its collaboration with traditional Western allies, the industry began to embark on cooperation with non-traditional allies, particularly after the outbreak of the civil war in Syria. This was evident, for example, in its efforts to initiate a programme to develop a long-range air and missile-defence system, which a Chinese company won the tender for in 2013.[22] Even Turkish defence exports saw an increase towards the second half of the 2000s. From USD 487 million in 2006, the defence industry attained USD 1.953 billion in exports in 2016.[23]

## The post-2016 period and current procurement strategy

Turkey's efforts at indigenization and broadening its cooperation network have intensified since 2016. These efforts were streamlined when the president placed the SSM under his direct control in 2018, renaming it to Savunma Sanayii Başkanlığı (SSB), as part of comprehensive reforms following the failed coup attempt two years earlier.[24] Apart from the intelligence agency, the SSB is the only other agency that is under the direct control of the president. Through this reform, the SSB gained considerable strength in terms of budget and legal framework compared to the ministries.

This reflects the importance the Turkish government places on the defence industry, viewing it as a policy tool to enhance the country's political and security footprint in the region.[25]

Turkey's current procurement strategy, crystallized after the reforms mentioned above, focusses on research and development (R&D) projects. The new Strategic Plan for 2024–2028 echoes the focal points of the 2019–2023 Strategic Plan, such as generating elite human capital to boost technological transformation. The latest Strategic Plan places its main emphasis on R&D, advanced technology development and strengthening indigenous efforts. Ankara views these as catalyzers for reducing external dependence, strengthening the Turkish defence industry ecosystem, and moving the country closer to its goal of strategic autonomy.[26] More specifically, Turkey's analysis focuses on the military application of AI, the development of unmanned warfare assets with emphasis on naval drones, and advancements in defence technologies, such as smart munitions.[27]

## Indicators of the defence industry's self-sufficiency

In a defence industry context, strategic autonomy translates to self-sufficiency. Consistent with earlier research, indicators of self-sufficiency include: (a) fulfilling the country's defence require¬ments through local sources, i.e., the level of indigenization, (b) lingering dependencies, (c) the industry's level of sustain-ability, evaluated through exports, R&D, human resources, dual-use capabilities, and international cooperation; and (d) defence imports along with diversification of suppliers.

### *Level of indigenization*

Indigenization is estimated by examining the level to which a country designs, develops, manufactures, and repairs its defence equipment. From 50% in 2010, the level of indigenization increased to 65% in 2018.[28] Since 2018, the Presidency's efforts to localize defence production have quickly led to results: the level of indigenization reached 80% in 2023, surpassing the 75% goal of the 2019–2023 Strategic Plan. The SSB's current target is to reach 85% indigenization by 2028.[29] Some examples of indigenized (sub)systems that replaced previously procured off-the-shelf subsystems include ASELSAN's optics and radars and Baykar's Kızılelma drone.

When considering indigenization, it is relevant to consider the value of the parts or (sub)systems of a weapon system that are not indigenous. The industry might have succeeded with indigenizing the majority of its products, for example, an aircraft's skeleton. However, if it continues to procure an off-the-shelf version of an essential component of a weapons system, for example, an aircraft's engine, then the value of the non-indigenized part (the 20%) is greater. Thus, the indigenization level of the Turkish defence industry should be evaluated in tandem with the industry's lingering dependencies.

### *Lingering dependencies*

Areas of lingering dependency include the components, subsystems, and parts that Turkish companies need for manufacturing major plat¬forms. The most critical lingering dependency regards engines. Semiconductors, such as micro-chips and nanotechnology assets, which are necessary for manufacturing, for example, missile propellants, comprise another critical area where the Turkish defence industry remains dependent on foreign suppliers and vulnerable to global security developments.[30]

Regarding machine tools, steps have been taken to develop the local machinery industry; machine-tool exports have increased and Turkey's machine-tool market is among the top ten in the world.[31] However, in 2022, Turkey was still the world's seventh-largest, and Europe's third largest, machine-tools importer.[32]

It is beyond the scope of this study to explore the extent to which Turkey's weapons production is dependent on foreign machine tools or whether locally produced machine tools are sufficient for its needs. However, it is vital to high-light Turkey's lingering dependency on machine tools, an aspect often missed when evaluating the manufacturing capacity of the country's defence industry.

Despite Ankara's focus on advanced technology development and modernization, its C4ISR infrastructure (command, control, computers, communications, intelligence, surveillance, and reconnaissance), i.e., the military's "nervous system," is tightly integrated into NATO's equivalent architecture. Considering that Turkey has far to go in modernizing its command and control networks, there is a lingering dependency on NATO's critical sensor architecture.[33]

The Turkish armed forces operates a variety of procured equipment, such as American F-16 fighter aircraft, AH-1S Cobra helicopters, and M60 battle tanks; German Leopard battle tanks; and Spanish amphibious landing craft.[34] Turkey is dependent on foreign suppliers to maintain such systems, although to varying extent, as it also invests in upgrading programmes for configuring the maintenance work it needs to carry out on its own. Moreover, indigenously produced platforms are often equipped with procured weapons; for example, Turkey's naval platforms are equipped with American Harpoon missiles. National R&D projects are currently developing systems that will eventually replace the procured ones, as is the case of the gradual integration of the ATMACA anti-ship missile into combat platforms.[35] Despite this, a certain weapon systems dependency remains.

Considering the regional threat landscape, Turkey's posture has two areas of persisting vulnerability: (a) its anti-ballistic missile capabilities and (b) its airpower's continuous dependency on fourth-generation aircraft. Considering the former, although Turkey has locally developed the Bora and Tayfun ballistic missiles, they are tactical assets, not strategic weapon systems.[36] Turkey has not activated its S-400 system since it purchased it from Russia, which indicates that the country remains dependent on NATO for missile defence (either through on-demand deployments or allied countries' capabilities). Regarding the latter, although Turkey's indigenous fifth-gene¬ration fighter jet, the TAI Kaan, recently had its maiden flight, it will not enter Turkey's arsenal until 2028, at the earliest. Until then, production will depend on American engines (F110), which will be replaced with indigenously produced engines from 2028.[37]

Thus, despite developments in the desired direction, the industry's level of indigenization, along with the lingering dependencies, suggest that Turkey has a long way to go before reaching the goal of self-sufficiency.

## *Sustainability of the local defence industry Export*

A few large companies and multiple medium-sized enterprises dominate Turkey's domestic market: the state itself is the main customer. The domestic market cannot absorb all of the local defence industry's products. Exports are thus not only essential for the development of Turkey's defence industry, but also in order to spread out the high initial costs of R&D and production. The combat-proven performance of Turkish weapon systems on various battlefields has catalyzed defence industry exports. The NATO-standard high-tech product range of Turkey's weapon systems has attracted interest in the Middle Eastern and African markets, in particular.[38] Other factors that have contributed to the increase in exports include the fall in the value of the Turkish lira and the Turkish defence industry's export policies, with their relatively generous after-sale support and technology transfer, as well as the products' cost-effectiveness.[39]

In 2023, Turkey was eleventh among the world's largest exporters of major arms, although with a 1.6 %, share in the global arms market.[40] Its exports were mostly comprised of armoured vehicles, ships, and drones. Between 2016 and 2023, its exports developed as follows:

**Table 1: Turkey's defence exports 2016–2023.**

| Year | Export revenues (billion USD)* | Turkey's rank among global exporters | Main clients (share of exporter's total exports, %) | | | Annual percent change |
|---|---|---|---|---|---|---|
| | | | 1st | 2nd | 3rd | |
| 2016 | 1.678 | 16 | Turkmenistan (29) | UAE (20) | Saudi Arabia (20) | - |
| 2017 | 1.739 | 15 | Turkmenistan (31) | UAE (24) | Saudi Arabia (16) | 4% |
| 2018 | 2.035 | 14 | UAE (30) | Turkmenistan (23) | Saudi Arabia (10) | 17 % |
| 2019 | 2.741 | 14 | Turkmenistan (25) | Oman (12) | Pakistan (12) | 35% |
| 2020 | 2.279 | 13 | Oman (19) | Turkmenistan (19) | Malaysia (11) | -17% |
| 2021 | 3.225 | 12 | Turkmenistan (16) | Oman (16) | Qatar (14) | 40% |
| 2022 | 4.396 | 12 | Qatar (20) | UAE (17) | Oman (13) | 36% |
| 2023 | 5.500 | 11 | UAE (15) | Qatar (13) | Pakistan (11) | 25% |

Sources: Export revenue data are collected from SASAD's annual performance reports.[42] Turkey's ranking and main client data are collected from SIPRI's annual fact sheets on international arms transfers.
* These figures are collected from SASAD's annual performance reports, where SASAD uses the price level of the respective year and reports the figures directly in US dollars. The figures are not adjusted to inflation.

The increase of arms exports from 2016–2023 was a staggering 228%. As a comparison, exports rose by 102% from 2009–2016. In 2023, the Turkish defence industry signed contracts with a total value of USD 10.2 billion.[42] Exports are vulnerable, however, to embargoes imposed by third parties, as they disrupt supply chains and lead to complications with export licenses. For its future efforts, the SSB has chosen to tackle this issue by prioritizing the production of systems with high local content and by further expanding the industry's supply channels through the establishment of multistakeholder mechanisms.[43]

## *R&D*

Apart from exports, R&D projects also contribute to making the industry sustainable and integrating it into international supply chains. More than 20% of Turkey's overall R&D investments involve R&D in defence, which resonates with the fact that R&D lies at the centre of Turkey's procurement strategy. The share of private companies in Turkey's R&D expenditures in defence is around 20%, which means that R&D investments are mainly covered by public resources.[44] Turkey's R&D investments in defence have been increasing, from USD 50 million in 2002 to USD 2.7 billion in 2022. Since 2020, Turkey's defence R&D expenditures have been on the increase, amounting to USD 2.4 billion in 2020, USD 2.6 billion in 2021 and USD 2.7 billion in 2022, ranking Turkey fifteenth amongst global R&D spenders.[45]

In 2022, R&D investments amounted to almost a fourth of Turkey's defence budget (USD 10.6 billion that year). Turkey's overall R&D expenditures are low compared to the OECD countries. In defence R&D, though, Turkey ranks among the top ten OECD countries.[46]

The R&D Panel, a committee formed in 2016, coordinates Turkey's defence R&D efforts. For the ongoing projects, the R&D Panel has approved a budget of USD 3.2 billion.[47] Recent results of indigenous R&D projects include the Long Range Anti-Tank Missile System (UMTAS) and CİRİT laser-guided missile.[48] The SSB's efforts to increase the number of R&D projects that will lead to reducing (technological) dependencies are reflected in the 2024–2028 Strategic Plan. Looking ahead, the Presidency prioritizes platform and system development projects that will utilize national and local resources.[49]

With the view to strengthening R&D efforts, the SSB also establishes private and public companies, which are encouraged to broaden their partnerships within the fields of defence, aviation, space, and homeland security.[50] This can contribute to the sector's sustainability in the long term, as it drives industry-to-industry relations and could facilitate the Turkish defence industry's involvement in, for instance, the integration of so-called "deep tech" into NATO. As of now however, the sector suffers from a lack of start-ups.[51]

A key aspect in evaluating R&D is the extent to which a country's efforts lead to innovations and capability improvements. The European Scoreboard 2023 lists Turkey among emerging innovators and mentions that Turkey currently scores low compared to the other European countries.[52] Thus, although Turkey's R&D efforts are adequate to boost the country's own capabilities, this innovation deficit signals Turkey's limited capacity to compete in international markets, at least for the time being.

## *Human resources*

A factor affecting the sustainability of the local defence industry is the increasing brain drain observed among defence experts and qualified workforce. In 2016, the Turkish government purged thousands of highly qualified engineers after assuming their involvement in the failed coup attempt the same year. Only in 2018, 270 senior defence contractors moved to Western countries to pursue better opportunities.[53] The two latest Strategic Plans (2019–2023 and 2024–2028) address the dearth of human resources as a threat to the defence industry's development and expansion efforts and mention that strategies should be created to prevent brain drain.[54] Regarding the new generation of the workforce, the SSB is planning to increase internships and job placements in the sector through employment programmes and increasing the outreach and number of trainings offered by the Defence Industry Academy.[55]

## *Dual-use*

Another factor that contributes to the industry's sustainability is civil-military interoperability, i.e., the dual-use of civilian and military assets. Through dual-use, the defence sector can tap into civilian resources when necessary. Dual-use is also relevant for the sector's self-sufficiency because third countries not only impose restrictions on military products, but also those used for civilian purposes for which there might be military applications. This was observable when the Turkish government developed plans for utilizing precision machinery for military purposes. Also regarding exports, multiple Turkish companies have been sanctioned for exporting indus¬trial products that were later used by third countries' defence industries.[56]

Assets that are relevant for dual-use not only include drones and submarines, but also components or technologies used in civilian assets, such as sensors, acoustic systems, computer chips, and lasers.[57]

The Turkish armed forces has a wide array of civilian assets to tap into when necessary. The manufacturing of dual-use products in Turkey is currently limited, although defence companies such as ASELSAN are increasing their investments in the development of a range of such devices, for example MR and portable X-RAY.[58] The SSB is working to integrate the electronics sector with the transportation, auto¬mobile, and machinery sectors, as part of wider efforts to integrate the civil sector more deeply with the defence industry.[59] An example of projects that the SSB has initiated is the Ant Project, which is developing communication infra-structure for both civilian and military vehicles. In the latest Strategic Plan, the SSB highlights the need to develop dual-use opportunities between the defence industry and the civil sector to increase efficiency in production.[60] The areas of interest for the Turkish defence industry, in terms of investment in dual-use technologies, are quantum, AI, and hyper¬sonic technologies, and autonomous systems. Moreover, although currently limited, an increase in techno¬logy transfers between the civilian and military sectors could contribute to the industry's future sustainability.

## *International cooperation*

Although Turkey has boosted its indigenization efforts, it values inter¬national cooperation. Notwithstanding this, the procurement of the Russian S-400 air-defence system in 2017 led to the termination of Turkey's participation in the F-35 Lightning II programme and hurt the country's potential for cooperation with Western partners. The S-400 deal was a high-level strategic transaction between Russia and Turkey and not a defence-industry trans¬action aiming to strengthen Turkey's defence industry efforts; rather, the deal's political value was larger than its value in meeting the needs of the industry. As a defence industry expert stated: "This was the most expensive defence deal ever. A rough estimate is 2.5 billion dollars for the missiles, at least 12 billion for the cancelled workshares of the Turkish companies in the F-35, and 20 billion for F-16 to fill the gap for the absence of F-35. Those were opportunity costs with zero Turkish local contents."[61] The cancelled workshares included the production of 400 aircraft parts for which Turkish companies would have been the sole producers.[62] At the time, this Russo-Turkish cooperation weakened the industry's growing potential. However, it did not affect Turkey's cooperation with non-Western partners, such as South Korea, Japan and China.

Looking ahead, according to the 2024–2028 Strategic Plan, the SSB will be focusing on increasing inter¬national institutional cooperation.[63] The SSB has recently undergone a restructuring and opened a department for international cooperation programmes that focus on NATO countries. According to the Strategic Plan, in addition to the partnerships developed with foreign companies by 2023, the aim is to establish two new partnerships with friendly and allied countries by 2026 and three more by 2028. The countries are not specified.[64] Moreover, the SSB has identified a way to increase international cooperation by establishing a state-to-state mechanism.[65] This does not exclude industry-to-industry relations, a field where the companies founded by the SSB could play a critical role. Another factor contributing to the local defence industry's sustain-ability is that a precondition for Turkey's entering a partnership is that it is treated as an equal partner. This entails prioritizing projects that boost local expertise and result in more benefits for the defence industry than solely the end product.[66]

Evaluating human resources, dual-use, and international cooperation, the Turkish defence industry shows signs of both positive development and continuous vulnerability. This pushes the goal of self-sufficiency further into the future.

## *Imports and diversification efforts*

Turkish defence imports have undergone a qualitative transformation. After the 1990s, imports have shifted in the 2000s from off-the-shelf procurement of major platforms to subsystems and components, such as engines. Between 2012 and 2015, import expenditures decreased (from USD 1.409 billion in 2012 to 1.067 in 2015). Since 2016, imports developed as follows:

**Table 2: Turkey's defence imports 2016–2022.**

| Year | Import expenditures (billion USD)* | Turkey's rank among global importers | Main suppliers (share of importer's total imports, %) | | | Annual percent change |
|---|---|---|---|---|---|---|
| | | | 1st | 2nd | 3rd | |
| 2016 | 1.289 | 6 | USA (63) | Italy (12) | Spain (9.3) | - |
| 2017 | 1.544 | 12 | USA (59) | Spain (16) | Italy (10) | 20% |
| 2018 | 2.449 | 13 | USA (60) | Spain (17) | Italy (15) | 59% |
| 2019 | 3.088 | 15 | USA (38) | Italy (24) | Spain (19) | 26% |
| 2020 | 2.161 | 20 | USA (29) | Italy (27) | Spain (21) | -30% |
| 2021 | 2.062 | 17 | Italy (30) | USA (22) | Spain (21) | -5% |
| 2022 | 2.700 | 19 | Italy (35) | Spain (20) | Russia (19) | 31% |

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For the period 2016–2022, imports increased by 109%. In 2023, Turkey ranked seventeenth among the world's top importers of defence equipment, with a share of 1.6% in the global arms market.[68] The imports trend since 2016, when compared to the preceding period, shows that the share of imports in the total turnover of the sector has not changed. The relatively high imports despite increased efforts at indigenization could be linked to Turkey's military operations in Syria and Iraq, as well as to its projection of power in its neighborhood. If evaluated in parallel to the country's exports, however, it can be stated that increased exports have relied on increased imports.

Throughout the years discussed here, but mostly since 2016, most of Turkey's defence imports derived from Europe and the US, followed by "other countries," as the Defence and Aerospace Industry Manufacturers Association (SASAD) categories the rest of the world's exporters. The share of other countries progresses as follows:

**Table 3: Turkey's defense imports from "other countries" 2016–2022.**

| 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|
| 11% | 15% | 7.6% | 8% | 10% | 13% | 15% |

After dipping between 2018 and 2019, the share of other countries has increased again since 2020.[69] 70% of its imports are still from the American and European industries on which the Turkish defence industry has long remained dependent.

Nevertheless, diversification efforts are becoming more visible. As shown in Table 2, Turkey received 19% of its defence imports from Russia in 2022. According to SIPRI data, even in 2023, imports from Russia accounted for 15% of Turkey's defense imports.[70] For subsystems vital for the domestic manufacturing of platforms, Turkey has opened up to new markets, as marked by the recent USD 200 million agreement with a South Korean company for the procurement of engines and automatic transmissions.[71] Turkey had already purchased trainer aircraft and armoured vehicles from South Korea, delivered in 2012 and 2020, respectively.[72] The most recent addition, however, sheds light on the qualitative shift in Turkish imports, as well as Turkey's desire to spread out its dependency channels.

The Qatari, Ukrainian, Pakistani, and Chinese defence industries are more examples of the visibility of Turkish diversification efforts. Ukraine is a friendly, albeit not yet traditional ally of the West. In the Turkish perspective, co¬ope¬ration with Ukraine is a case of diversification. The cooperation between the countries has deepened, as seen in the acquisition of Ukrainian engines for the Akıncı and Kızılelma drones, as well as the ATAK helicopter; or in the agreement on producing Turkish drones in Ukrainian factories.[73] Pakistan, another diversification partner, is neither a traditional nor necessarily friendly ally of the West, as it enjoys tight defence industry cooperation with China. Nevertheless, the Turkish defence industry serves the Pakistani armed forces through multiple projects.[74] An example is a project for the modernization of the Pakistani Navy's submarines.[75] In a similar vein, Turkish-Qatari relations have intensified since 2014 and recently led to the signing of multiple defence cooperation agreements.[76] The cooperation between the countries has deepened particularly since 2018 under the auspices of BMC, a Turkish-Qatari venture that manufactures and repairs military vehicles.[77] In a similar pattern of diversification of defence industry cooperation, common Turkish-Chinese efforts resulted in the production of the Bora tactical ballistic missile in 2017.[78] Among the SSB's priorities for enhancing the sustainable development of the defence industry and reducing the sector's vulnerability, the 2024–2028 Strategic Plan highlights the need for diversification.[79] Thus, it should be expected that Turkey's diversification efforts, in the form described above, will broaden.

A factor that should be kept in mind, however, is that imports are tightly linked to depreciation of the local currency. The imported systems and components are priced in the currency of the suppliers, which has the effect of raising the cost of system integration and production for the Turkish companies.[80] This problem will remain as long as the Turkish lira is volatile.

Thus, despite positive developments, an evaluation of imports and diversification efforts indicates that Turkey has not yet effectively reached the goal of strategic autonomy.

## Concluding remarks and future prospects

Strategic autonomy can be seen along a spectrum: countries aim for different levels of autonomy in various areas of strategic interest. Not even global powers attain absolute strategic autonomy in all areas. Independent foreign-policy action, however, requires self-reliance and thus self-sufficiency in absolute terms. In Turkey, defence industry developments, particularly since 2016, indicate maturing capabilities. However, the existing bottlenecks suggest that the country has a long way to go before attaining self-sufficiency and being able to set in motion its military capabilities in a manner completely unhindered by its allies.

All indicators chosen for evaluating self-sufficiency suggest the same. The industry scores high on level of indigenization (currently 80%), yet the non-indigenized 20% regards critical (sub)systems without which the locally manufactured products can neither operate, nor fulfill their potential. Vulnerabilities in posture continue Turkey's dependency on its allies, for example, when considering missile defence. Due to diversification efforts, Turkey's lingering dependencies even apply to nontraditional allies, such as Russia and Qatar. However, some dependencies have political value. For instance, Turkey's radar and sensor infrastructure is integrated into NATO's architecture, providing Turkey with benefits in terms of intelligence-gathering, algorithmic-warfare capacity, and interoperability through the advanced networks of NATO member states. This indicates that relative (instead of absolute) autonomy is not only a result of capability but also of choice. Turkey enjoys positive trends regarding the sustainability of its defence industry, as exports increase both in quantity and in terms of diversification, and the Presidency invests considerably on international cooperation efforts and R&D. Moreover, although the local manufacture of dual-use products is limited, there is an array of assets for civilian use that the Turkish defence sector can tap into. However, none of these factors is immune to foreign influence; for instance, export licenses usually pass through third parties. Factors such as the brain drain among the qualified workforce, the innovation deficit within the country's R&D efforts, and the lack of start-ups negatively affect the sector's sustainability and Turkey's capacity to compete in international markets.

Although Turkey's defence imports are vulnerable to the currency crisis and have not decreased considerably, they have undergone a qualitative transformation, maintaining a need for (sub)systems and components rather than major platforms. However, some of those subsystems, for example engines, are essential both for pushing the indigenization of the industry and the country's export potential. Lastly, considering Turkey's diversification efforts, vital steps have been taken for opening up to new markets, both for imports and for cooperation, yet the largest part of Turkey's supply chains still lies with the country's traditional allies in the West. Future research should look into how lingering dependencies regarding machine tools affect the potential for manufacturing the systems that Turkey's defence industry currently focuses on.

As in the red apple myth, the more distant the goal of strategic autonomy the more alluring it becomes. Turkey is monitoring all regional conflicts and uses the lessons learned for defining which assets will be critical in the future of war¬fare and for fueling its own efforts in the high-tech defence industry. Regarding future prospects, the SSB invests in all areas it considers to be building blocks for the industry's self-sufficiency. Although the country would prefer to produce all systems independently, it is not economically feasible. The latest Strategic Plan highlights the desire to increase cooperation projects. This not only facilitates diversification, but also gains Turkey leverage vis-à-vis its Western allies for integrating the country in the West's military industry complex. The documented desire for cooperation projects sends the message that in the case of limited interest from the West, Turkey could instead enhance its efforts to integrate itself into alternative cooperation networks.

Areas where the country would prefer *complete independence* are the production of ammunitions, robotics, and drones. Successful develop¬ments in these areas would provide Turkey with a competitive edge, which would open up a larger space for the country in the transatlantic community's armaments network. The naval shipbuilding industry is also an area where Turkey should be expected to continue to operate independently. Thus, major naval systems and combat management systems for warships are examples of products that Turkey would like to manufacture on its own. Examples of subsystems are electronic warfare systems, software, and optics.

To share the high costs and technical risks, and to enhance foreign policy benefits, aircraft and sophisticated drones could be areas where the Turkish defence industry is willing to cooperate, provided that Turkey retains local expertise.

Considering the S-400 deal, however, it is uncertain which Western countries would be willing to cooperate with Turkey in this area. Cooperation with mutual independence would potentially regard testing and certification, design and engineering processes, advanced weapon system production, and sensors and radars. Currently, Turkey both procures off-the-shelf items and manufactures indigenous products in areas such as ammunition, weapon systems for platforms, and infantry weapons. Off-the-shelf procurement can be expected to continue, for example, regarding microchips and semiconductors, yet unlikely for major platforms (if the decision is made according to the industry's needs).

However, whether Turkey will procure a major platform in the near future will also depend on its progress in building its fifth-generation fighter jet, TAI KAAN. Considering the analysis of the country's threat landscape, it is not impossible that the country purchases fifth-generation fighter jets until the locally produced model enters the armed forces' arsenal. Lastly, areas where Turkish defence R&D efforts should be expected to focus are smart technologies and high-tech defence techno¬logy that counters emerging disruptive technologies.

From Turkey's perspective, strategic autonomy is not a force that intrinsically drives Turkey away from NATO, nor is it in conflict with collective defence. Cooperation with states that the West sees as adversaries or antagonists is seen in Turkey as part of the country's efforts to broaden its partnership network in order to circumvent limitations imposed by external powers. Through strategic autonomy, and in an effort to build up its posture and spread out or decrease its dependencies, Turkey is trying to recalibrate its role in the region, increase its value for the West, and reintroduce itself as an equal partner. This has the ambition of influencing the West's threat-perception analysis and its ability to attain its goals. The way Turkey operationalizes strategic autonomy in its defence industry efforts progressively provides it with greater latitude for independent action. Whether or not NATO and the EU countries eventually decide to integrate Turkey more deeply into the West's defence architecture and military-industrial complex will determine whether Turkey utilizes its maturing military capabilities to serve the alliance's shared goals or pursue its own regional ambitions.

1. Interview with Professor Serhat Güvenç, Istanbul, 28 March 2024.
2. Examples include holistic defense, defense autarky, and operational independence.
3. Turkey's national security strategy continues to be based on i) "active deterrence," which entails coercive diplomacy combined with military means to tackle regional threats, and 2) the "two-and-a-half-war doctrine," which means that Turkey maintains high combat-readiness to fight two conventional wars and at the same time run an anti-PKK low-intensity campaign both within and outside Turkish territory. See Kasapoğlu, Can (2022) "Techno-Geopolitics and the Turkish way of drone warfare," Atlantic Council in Turkey.
4. This is the author's own definition, resulting from the analysis of both primary and secondary data.
5. Interview with Professor Murat Yeşiltaş, SETA, Istanbul, 21 March 2024.
6. Interview with Professor Serhat Güvenç, Istanbul, 28 March 2024.
7. Interview with Özgür Ünlühisarcıklı, German Marshall Fund, Ankara, 2 April 2024.
8. See Bağcı, Hüseyin, Kurç, Çağlar (2017) "Turkey's strategic choice: Buy or make weapons?" Defense Studies, Vol. 7(1), p. 42, 43.
9. See Kutlay, Mustafa, Öniş, Zıya (2021) "Turkish foreign policy in a post-western order: Strategic autonomy or new forms of dependence?" International Affairs, Vol. 97(4), p. 1085–1104.
10. See Kasapoğly, Can (2020) "Turkey's burgeoning defense technological and industrial base and expeditionary military policy," Insight Turkey, Vol. 22(3).

11. Rossiter, Cannon, 2022, p. 215.

12. Egeli, Sıtkı, Güvenç, Serhat, Kurç, Çağlar, Mevlütoğlu, Arda (2024) "From client to competitor: The rise of Turkiye's defence industry," IISS, p. 22.

13. For a detailed historical overview of the defense industry developments in Turkey, see Egeli, Güvenç, Kurç, Mevlütoğlu, 2024, p. 5–9.

14. Ibid, p. 11.

15. The coup in 1997, where the military ousted the religious Welfare Party-led government, is referred to as postmodern because it was carried out through pressure behind the scenes, instead of direct military intervention.

16. Hürriyet (2005) "Savunmada ortak üretim dönemi bitiyor" [The era of joint production in defense is ending], 7 July.

17. *Hürriyet* (2004) "Tank ve helikopter ihaleleri iptal edildi" [Tank and helicopter tenders cancelled], 14 May.

18. Egeli, Güvenç, Kurç, Mevlütoğlu, 2024, p. 18; Savunma Sanayii Müstesarlığı. "2018–2022 Savunma Sanayii Sektörel Strateji Dokümanı" [Undersecretariat for Defence Industries, 2018–2022 Defense Industry Sectoral Strategy Document], p. 32.

19. Interview with defence expert, Dr. Çağlar Kurç, Ankara, 2 April 2024. System integration refers to the capacity of a defence company to bring together diverse compo¬nents and ensure the proper functioning of the final product.

20. Nugent, Bob (2023) "The MILGEM Programme: Turkish Naval Procurement and Exports," European Security and Defense, 31 May.

21. Seren, Merve (2020) "Turkey's military spending trends: A reflection of changes in defense policy," *Insight Turkey*, Vol. 22(3), p. 204.

22. Egeli, Sıtkı (2019) "Making sense of Turkey's air and missile defense merry-go-round," *All Azimuth*, Vol. 8(1), p. 69–91.

23. Savunma Sanayii Müstesarlığı. "2018–2022 Savunma Sanayii Sektörel Strateji Dokümanı" [Undersecretariat for Defense Industries, 2018–2022 Defense Industry Sectoral Strategy Document], p. 11.

24. Savunma Sanayii Başkanlığı (SSB) is translated as the Defence Industry Agency.

25. Interview with defence-industry expert on condition of anonymity, Ankara, 5 April 2024.

26. Savunma Sanayii Başkanlığı. 2024–2028 *Stratejik Planı*, p. 26.

27. Interview with Sine Özkaraşahin, EDAM, Istanbul, 18 April 2024.

28. Akça, İsmet, Özden, Barış, Alp (2021) *A political economic map of the Turkish defense industry*. Heinrich Böll Stiftung, p. 40.

29. Savunma Sanayii Başkanlığı. 2024–2028 *Stratejik Planı*, p. 17, 80.

30. Interview with defence-industry expert on condition of anonymity, Ankara, 3 April 2024.

31. Simply put, machine tools are the machines that produce machines and thereby weapons systems. *South East European Industrial Market* (2024) "Turkiye's machine tool market," 18 March.

32. TİAD. *Türkiye Takım tezgahları ve tamamlayıcı ekipmanları 2023 — 3. Çeyrek sektör analizi.* [Turkey machine tools and complementary equipment 2023 — Q3 sector analysis], p. 2.

33. Kasapoğly, Can (2022) "Transforming from arms importer to trendsetter: Assessing the growth of Turkey's defense industries, *Defense Journal by Atlantic Council in Turkey*, 22 December.

34. IISS. Chapter Three: Europe: The military balance 2024, p. 148–150.

35. *Turkish Defense News* (2022) "Turkish navy to integrate ATMACA missiles to all combat platforms," 6 February.

36. Kasapoğly, Can (2020) "Turkey's burgeoning defense technological and industrial base and expeditionary military policy," *Insight Turkey*, Vol. 22(3).

37. Milliyet (2024) "Milli uçak KAAN gök vatanda! İşte F-16 ve KAAN karşılaştırması" [National aircraft KAAN is in the sky homeland! Here is the comparison between F-16 and KAAN], 22 February.

38. Sünnetci, İbrahim (2024) "Turkish Defense & Aerospace Industry Makes a Grand Entrance at WDS 2024 with 65 Companies!" *Defense Turkey*, Vol. 18(130).

39. Interview with Sine Özkaraşahin, EDAM, Istanbul, 18 April 2024.

40. Wezeman, Pieter et al. (2024) *Trends in international arms transfer*, 2023. SIPRI Fact Sheet, p. 2.

41. SASAD. Performans Raporu 2022, p. 8; SASAD. *Performans Raporu* 2021, p. 10; SASAD. *Performans Raporu* 2020, p. 11; SASAD. *Performans Raporu* 2019, p. 8; SASAD. *Performans Raporu* 2018, p. 8; SASAD. *Performans Raporu* 2017, p. 5; SASAD. *Performans Raporu* 2016, p. 5; Yaylali, Cem (2024) "Turkey's defense, aerospace exports rose by 25% last year," *DefenseNews*, 8 January.

42. *Hürriyet* (2024) "Savunma Sanayii'nden 2023 yılında 10 milyar dolarlık sözleşme" [10 billion dollar contract from Defense Industry in 2023], 17 February.

43. Savunma Sanayii Başkanlığı. *2024–2028 Stratejik Planı*, p. 96.

44. Akça, Özden, 2021, p. 55.

45. Studt, Tim (2022) *Global R&D Funding Forecast 2022*. Industrial Research Institute.

46. Organisation for Economic Co-operation and Development (OECD), Research and Development Statistics (RDS) Database.

47. Savunma Sanayii Başkanlığı. AR-GE ve Teknoloji Yönetim Portalı, [R&D and Technology Management Portal], Ar-Ge Paneli (ssb.gov.tr)

48. Seren, 2020, p. 205.

49. Savunma Sanayii Başkanlığı. *2024–2028 Stratejik Planı*, p. 15, 55.

50. Savunma Sanayii Başkanlığı. *2018–2022 Savunma Sanayii Sektörel Strateji Dokümanı* [2018–2022 Defense Industry Sectoral Strategy Document], p. 10.

51. Volkan Öskiper, Turkey's ministry of Foreign Affairs, Speech at Atlantic Council's virtual event "Turkey's emerging defense technologies and the future of NATO," 9 July 2024.

52. European Commission. "European Innovation Scoreboard 2023," p. 28.

53. *Ahval* (2019) "Exodus from Turkey hits defense contractors," 9 January. For an explanation of the brain drain in the sector, also see Savunma Sanayii Dergilik (2019) "Savunma sanayii ve beyin göçü" [Defense industry and brain drain], 17 April.

54. Savunma Sanayii Başkanlığı. *2019–2023 Stratejik Planı*, p. 70; Savunma Sanayii Başkanlığı. 2024–2028 Stratejik Planı, p. 44.

55. Savunma Sanayii Başkanlığı. *2024–2028 Stratejik Planı*, p. 91, 92.

56. See U.S. Department of the Treasury, (2023) "Treasury Targets Russian Financial Facilitators and Sanctions Evaders Around the World," 12 April.

57. See Wassenaar Arrangement Secretariat (2023) "Wassenaar Arrangement on export controls for conventional arms and dual-use goods and technologies. Public documents Volume II. List of dual-use goods and technologies and munitions list."

58. *Savunma Sanayii Dergilik* (2023) "Savunma teknolojilerinde çift kullanım" [Defense Industry Magazine (2023) "Dual use in defense technologies], 18 April.

59. Savunma Sanayii Başkanlığı. *2024-2028 Stratejik Planı*, p. 43, 65.

60. Savunma Sanayii Başkanlığı. *2024-2028 Stratejik Planı*, p. 65.

61. Interview with defense industry expert, on condition of anonymity, Ankara, 4 April 2024.

62. Tirpak, John, Everstine, Brian (2019) "Cold Turkey: Shanahan pushes Ankara out of F-35," *Air and Space Forces Magazine*, 7 June.

63. Savunma Sanayii Başkanlığı. *2017–2021 Stratejik Planı*, p. 54.

64. Savunma Sanayii Başkanlığı. *2024-2028 Stratejik Planı*, p. 61.

65. Ibid.

66. Interview with defense expert, Dr. Çağlar Kurç, Ankara, 2 April 2024.

67. SASAD. *Performans Raporu 2012*, p. 3; SASAD. *Performans Raporu 2015*, p. 11; SASAD. *Performans Raporu 2022*, p.12; SASAD. *Performans Raporu 2021*, p.16; SASAD. *Performans Raporu* 2020, p.13; SASAD. *Performans Raporu* 2019, p.13; SASAD. *Performans Raporu* 2018, p.13; SASAD. *Performans Raporu* 2017, p. 13; SASAD. *Performans Raporu* 2016, p. 13

68. Wezeman, Pieter et al (2024) *Trends in international arms transfer*, 2023. SIPRI Fact Sheet, p. 6.

69. SASAD. *Performans Raporu* 2022, p.12; SASAD. *Performans Raporu* 2021, p. 16; SASAD. *Performans Raporu* 2020, p.13; SASAD. *Performans Raporu* 2019, p.13; SASAD. *Performans Raporu* 2018, p.13; SASAD. *Performans Raporu* 2017, p. 13; SASAD. *Performans Raporu* 2016, p. 13.

70. Wezeman, Pieter et al (2024) *Trends in international arms transfer*, 2023. SIPRI Fact Sheet, p. 6.

71. Tiwari, Sakshi (2023) "Turkey signs $200 million deal with South Korea as Seoul starts eating into European defense market," Eurasian Times, 31 January.

72. SIPRI. Arms transfer database.

73. Dost, Pinar (2024) "The Ukraine-Turkey defense partnership with the potential to transform Black Sea and Euro-Atlantic security," Atlantic Council, 5 March; Shephard (2021) "Turkish Aerospace buys Ukrainian engines for Atak," 6 July.

74. Siyez, Baladır (2023) "Pakistan-Türkiye defense industry cooperation," Defence Turkey, Vol. 17(121), p. 34–35.

75. STM. Pakistan Navy AGOSTA 90B Class Submarine Modernization Project: Khalid Class Agosta PNS Hamza.

76. *Anadolu Agency* (2023) "Türkiye, Qatar sign 12 agreements, issue joint declaration after high strategic committee meeting," 4 December.

77. Adly, Ayman (2022) "BMC Turkiye welcomes cooperation with Qatari companies," *Gulf Times*, 26 September.

78. Kasapoğly, Can (2019) "Turkey's Bora missile saw combat debut: What next?" *Anadolu Agency,* 19 May.

79. Savunma Sanayii Başkanlığı. *2024-2028 Stratejik Planı*, p. 54.

80. Saleh, Deena (2023) "An economic perspective into Türkiye's Defense Sector and Arms Production: Domestic and Global Implications," PRISME, Spring 2023, p. 5.

# A Viking in the Sun

The latest addition to the digital exhibition *Nordic Tales, Byzantine Paths*!

Did the Norwegian king Harald Hardrada serve in the Byzantine emperor's Varangian guard? And is it true that the emperor tried to feed him to a dragon? Did his experiences from the Byzantine Empire influence his later policies in Norway? And was there really a chapel devoted to his brother, St. Olav, in Constantinople?

A collaboration with the ongoing project *A Viking in the Sun* at Edinburgh University has enriched the digital exhibition *Nordic Tales, Byzantine Paths* with a special section devoted to the fascinating story of Harald Hardrada, illustrated by Per Demervall, the comic artist behind *The Adventures of Siri*. Check them all out on:

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