

# Convergence of European security and defense preferences? A quantitative text analysis of strategy papers, 1994–2018

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[journals.sagepub.com/home/eup](https://journals.sagepub.com/home/eup)**Konstantin Gavras** Department of Social Sciences, University of Mannheim,  
Mannheim, Germany**Matthias Mader**Department of Politics and Public Administration, University of  
Konstanz, Konstanz, Germany**Harald Schoen**Department of Social Sciences, University of Mannheim,  
Mannheim, Germany**Abstract**

Since the end of the Cold War, the EU aims to advance to a relevant and autonomous actor in international politics—especially concerning security and defense politics. Scholars interested in whether the EU member states actually converge in their security and defense preferences often analyze strategy papers qualitatively, focusing on selected countries at specific points in time. In this article, we propose a dictionary approach for analyzing the development of security and defense preferences within the EU over the last three decades using quantitative text analysis. We make use of 163 strategy papers, published by all EU member states and the EU itself since 1994. The findings show that EU member states react similarly to international events, but do not converge substantially in their preferences. Furthermore, there is no substantial convergence to the

**Corresponding author:**Konstantin Gavras, Department of Social Sciences, University of Mannheim, A5 6, Room A-342, 68131  
Mannheim, Germany.Email: [kgavras@mail.uni-mannheim.de](mailto:kgavras@mail.uni-mannheim.de)

position of the EU itself. We finally discuss usefulness and validity of quantitative text analysis in comparative research more broadly.

### Keywords

Security and defense politics, European integration, quantitative text analysis, preference convergence, strategy papers

## Introduction

The convergence of the European Union (EU) member states' foreign and security preferences is widely considered to be important for the EU to become an autonomous actor in international politics. Correspondingly, scholars have been interested in whether the member states have converged on these issues in the last decades. An important data source to study this question are national strategy papers. Such analysis is usually conducted using qualitative methods, focusing on a few countries and/or specific points in time (e.g. de France and Witney, 2013; Giegerich, 2006; Meyer, 2005; Pannier and Schmitt, 2014). While the qualitative analysis of strategy papers—and other official texts on the topic—has produced valuable insights, it has proven less useful in addressing large-scale comparative questions, such as the development of security and defense preferences within the EU. While it is in theory possible to apply qualitative methodology to such questions, the sheer amount of work necessary to implement it has so far discouraged the implementation.<sup>1</sup>

In this article, we employ quantitative text analysis (QTA) tools—which can easily handle large amounts of text, although they have other limitations—to answer these large-scale comparative questions. Our contribution thus joins a small group of studies that use key strategic documents to make foreign and security policy preferences, or even cultures, measurable with the help of QTA methods (Becker, 2021; Becker and Malesky, 2017).<sup>2</sup> We use a dictionary approach to examine whether security and defense preferences of Eastern and Western European countries and of the EU itself converge. While we mainly explore the usefulness of this QTA method rather than providing definitive answers, we believe that the empirical findings—however tentative they may be—are of substantive interest as well, as they address unresolved questions in current research on security and defense politics (Barbé and Morillas, 2019; Pirani, 2016).

Starting from the assumption that strategy papers represent the national preferences in security and defense politics at a given point in time, we can use these documents to compare preferences across time and space.<sup>3</sup> To operationalize convergence, we draw on prior research and distinguish three analytical dimensions of comparison. 'Sigma-convergence' (Heichel et al., 2005), i.e. decreasing coefficients of variance, is studied on two relevant dimensions. First, *similarity of preference shifts* examines whether states exhibit (increasingly) uniform changes in preferences in reaction to prominent international events. We hence utilize the fact that such events create the necessity for a conscious response of the states under consideration here (where the decision to stay the course could be one such response). Such parallel changes would not indicate a

convergence of preferences in the absolute, as parallel movement in preference would mean that the distance between states after the event remains the same as before. Second, and at the heart of the matter, *similarity of preferences at the absolute level* relates to the degree to which countries exhibit the same set of beliefs and ideas about defense and security issues in an absolute sense. If we find increasingly similar strategic paper content at the absolute level, there is evidence of convergence on this dimension.<sup>4</sup> The third dimension of comparison captures ‘delta-convergence’, i.e. the question of decreasing distance of preferences toward an exemplary model (Heichel et al., 2005). *Similarity of preferences of the EU and its member states* focuses on whether the preferences of the member states are increasingly similar to the positions of the EU, as expressed in the organizations’ own strategy papers.

We examine these dimensions on the basis of the 163 strategy papers published by all EU member states and the EU itself since 1994. As noted, QTA is particularly promising in this context as it can easily handle large amounts of text. Hence, the practical limitations that have prevented large-scale comparative analyses in security and defense policies do not apply to QTA. As QTA methods are still relatively new but increasingly popular in International Relations more generally (Baturo et al., 2017), this study can be of interest to scholars beyond the security and defense domain.

## **Preference convergence in the security and defense domain**

Our goal is to describe, not explain, trends in the similarity of preferences. Nevertheless, theoretical considerations play a role in our choice of comparative dimensions, as well as in the decision to group countries into East and West. It is hence useful to briefly consider two key mechanisms of convergence that are discussed in the literature (e.g. Bennett, 1991; Holzinger and Knill, 2005) and seem most relevant for the security and defense domain. First, convergence might result from independent responses to the same pressures and external shocks. Facing the same challenges of the post-Cold War international system, European states may have come to develop the same security and defense preferences and recognized that there are incentives to find common solutions (Hill, 1997). Second, transnational communication, learning, and spill-over effects—in the context of the European integration process, in particular—might have led to increasingly similar views on security and defense. Accordingly, one may argue that the constant interactions between European countries in conducting their respective national policies in conjunction with the development of the EU’s Common Security and Defense Policy—however slow and incomplete—lead to the development of common preferences (Howorth, 2012; Meyer, 2005).

There are also reasons to doubt convergence. Looking more closely at the European countries, one may argue that they continue to have different long-term strategic interests. For example, geographic proximity and history make Eastern European countries more vulnerable to Russian territorial ambitions than Western European countries. Moreover, one could emphasize how weakly developed European integration in the area of security and defense actually is. This, in turn, raises doubts as to whether the mechanisms for preference formation described previously are really that strong.

These rivalling expectations on the prospects of preference convergence in the security and defense domain underlines the importance of the present article's goal of expanding researchers' toolboxes to study convergence empirically. They also guide our decision to distinguish between Eastern and Western European countries and to incorporate the EU as a potential independent and socializing actor into the analysis.

## Selecting a QTA method

Using QTA to study preference convergence requires selecting the most appropriate method among the existing methods, which have different strengths and weaknesses. We argue that a dictionary approach is the most promising method for our specific research question here. Dictionary approaches rely on the initial definition of a 'content analysis "dictionary" of words or phrases systematically associated with particular coding categories in relevant texts' (Laver and Garry, 2000: 625). The words or phrases associated with each category are then automatically counted. At the most basic level, we want to capture the relevant features of countries' preferences on the basis of strategy papers. We also have a fairly good understanding of what to measure, as prior research has identified a number of key concepts that are substantively relevant and known to be discussed within the strategy papers. Thus, the measurement task is confirmatory rather than exploratory, and the method must allow a simultaneous measurement of multiple concepts. Given these requirements, a dictionary approach to the quantitative analysis of strategy papers seems most promising, as it allows measuring both the saliency of specific concepts and positive or negative evaluations expressed toward a given concept.<sup>5</sup> Scaling procedures, where documents are used as anchor points to arrange units of observation on a single dimension, are not helpful as they do not allow measuring multiple concepts.<sup>6</sup> Semi-supervised or supervised machine-learning methods (Grimmer and King, 2011; Slapin and Proksch, 2008), in contrast, allow the extraction of multiple dimensions from a text corpus. However, both semi-supervised machine-learning methods (such as classification (Grimmer and King, 2011)) and unsupervised scaling methods (Laver et al., 2003; Slapin and Proksch, 2008) inductively extract a small number of independent dimensions or classes using machine-based algorithms. In effect, the analysis would be exploratory rather than confirmatory, and hence would not fit with our goal of measuring pre-specified concepts.

In sum, a dictionary approach seems best-suited to accomplish the measurement task that is confirmatory rather than exploratory and consists of capturing multiple concepts. In the following empirical analysis, we use this approach to study convergence and divergence in strategy paper content.

## A dictionary-based approach to analyzing strategy papers

### *Data and data preparation*

The empirical analysis is based on all strategy papers of the 27 EU member states, the United Kingdom (UK) and the EU that were published in the period 1994–2018.

Before 1994, European countries rarely published strategy papers and thus it is not possible to include previous years in the analysis. To rule out omissions, we cross-checked our collection with Razeto and Jenne's (2021) recently published data set on security and defense policy documents for omission. We acquired a total of 163 national strategic papers in this way. A list of all papers used and key summary descriptive statistics can be found in the Online appendix.

Most of the strategy papers considered here (85%) were written in English. Some strategy papers, however, were only available in French (10 documents), German (10), Portuguese (4) and Spanish (1). They were translated using the Google Translate API (Google, 2021). De Vries et al. (2018) show that Google Translate works remarkably well, when using dictionary-based quantitative text analyses approaches. We then followed standard procedures of preparing the data for quantitative analysis using the R package *quanteda* (Benoit et al., 2018). First, the documents were transformed into a unified corpus that includes the relevant meta-data on the publishing country and year. Based on this corpus, we created a document-feature matrix and deleted characters, numbers, stop words, and symbols. In addition to standard stop words of the English language, we also excluded mentions of the respective country in each country document. Finally, all remaining words were reduced to their stem, and the frequency of each word stem was normalized, i.e. we calculated the relative frequency within the respective document.<sup>7</sup>

### *Dictionary-based measures of strategy paper content*

When analyzing strategy paper content using a concept-based approach, the first task is to decide which concepts to consider. Often this choice is determined by the substantive research question. Based on our interest in broad trends in security and defense politics, we focus on a selection of related concepts that cover different topics.

As for general principles, we include *multilateralism* as a major structuring principle for European security and defense politics (Meyer, 2005). Additionally, we include *Europeanization* as a concept describing European initiatives in security and defense policies. We also consider *NATO*, the *United States of America* and *Russia*, as these are arguably the most important non-European actors (in the period considered here). Lastly, we also cover three potential threats that may or may not have been considered relevant in the last three decades, namely *terrorism*, *migration* and *cyber-threats*.

Naturally, this list of concepts is not exhaustive. Yet, they all constitute key concepts that allow us to speak to important substantive questions. Furthermore, they differ in complexity, enabling us to explore the usefulness of the dictionary approach for simple and complex concepts. We expect that the two general principles (*multilateralism* and *Europeanization*) will be more difficult to measure using dictionaries than actors and potential threats.

We developed dictionaries for these concepts both deductively and inductively. We first identified the most important keywords associated with a concept in the literature and then examined the 1000 most common words in the data set to check for missing keywords.<sup>8</sup> To capture sentiment, we rely on the pre-defined AFINN Sentiment Lexicon dictionary, which encompasses valence scores of about 2500 words (Nielsen, 2011).<sup>9</sup> The

dictionaries were then applied to the cleaned corpus of text to retrieve measures of the salience and sentiment of the relevant concepts in a given document. Importantly, a sentence-based approach was used, meaning that the percentage of sentences including words from the dictionary (salience) and the average sentiment score of these sentences (sentiment) were calculated. This approach allows for aspect-based differentiations within each document and more fine-grained analyses (Thet et al., 2010).

### *Strategy to identify divergence and convergence*

Using the previously described measures of strategy paper content, we assess different types of convergence among the EU member states. Due to space considerations and to facilitate spotting broad patterns in the multitude of country-specific trajectories, we present aggregated trends for Eastern and Western European countries, respectively. Country-specific trends are reported in the Online appendix. We define countries as Eastern European if they were part of the Eastern bloc or former Yugoslavia before 1991.<sup>10</sup> Although this is only one out of many potentially relevant groupings, we expect important differences regarding security and defense preferences and trajectories between these two groups (Henderson, 2005). Also, we only consider *Europeanization*, *NATO*, *the United States of America* and *Russia* for the sentiment analysis, as it is reasonable that countries evaluate these concepts positively or negatively. For the other concepts, this is not as straightforward. The results of the affect component of the other concepts are reported in the Online appendix.

We evaluate whether there is decreasing variation in preference shifts in response to events and decreasing variation in preferences in the absolute sense ('sigma convergence', Heichel et al., 2005). To assess if countries reacted in similar ways to international events (similarity of preference shifts), we first estimate linear regression models on the *country-level time-series* for each Western and Eastern European country, respectively, to test for linear trends of convergence or divergence. Secondly, we interpret graphical displays of *yearly averages* in the two regions. We conduct this two-step procedure of formal modelling and informal graphical interpretation both for the salience and sentiment scores. Averages were calculated on the basis of whatever strategy papers were published in a given year. Similar reactions to prominent international events at the country level (such as the 9/11 terrorist attacks in 2001, the Iraq War in 2003, or the Russian annexation of Crimea in 2014) would result in clearly identifiable movement of the yearly averages; inconsistent reactions, in contrast, would cancel each other out at the aggregate level. Hence, increasingly pronounced shifts in aggregate level strategy paper content indicate convergence. To assess how similar the published strategy papers are at a given point in time (similarity of preferences), we display *yearly standard deviations* of salience and sentiment scores among Eastern and Western countries, respectively. The smaller the standard deviations at a given point in time, the more similar the content is. Decreasing standard deviations of a given measure as time progresses would indicate convergence of preferences. Finally, we assess 'delta convergence' (Heichel et al., 2005) by comparing the EU strategy papers with national strategy papers published within a time span of two years around the EU documents, separately for Eastern and Western countries. The smaller the distance between national papers and EU papers— i.e., the more a given EU paper forms the

center of a closely-knit cluster of national papers—the higher is the convergence of preferences in the European multilevel system.

### *Assessing the validity of the measures*

We assess the validity of the dictionary-based measures by comparing them with previous findings regarding the preferences of UK, France, and Germany. An in-depth discussion of the validation analysis can be found in the Online appendix. These countries have been analyzed fairly thoroughly using fine-grained, qualitative methods, to the effect that these insights represent a good source for validation criteria. We focus on the salience of *multilateralism*, *Europeanization*, *NATO*, and the *United States* for this exercise. In sum, the validation analysis both induces confidence (because general findings from qualitative research can be reproduced using the dictionary-based measures) and points to certain characteristics of the measures that advise against taking individual scores at face value. For the time being, we will proceed assuming that the inspection of large-scale patterns can extend our knowledge about the content of strategy papers and, by extension, national preferences in security and defense policies. Such an analysis will allow us to examine the pattern toward convergence and divergence over time and between regions taking account of all EU member states. At the same time, the task of validation is far from completed, calling for more efforts to increase our knowledge about the strengths and weaknesses of the approach.

## **Results**

### *Dynamics of concept salience and sentiment in eastern and Western Europe*

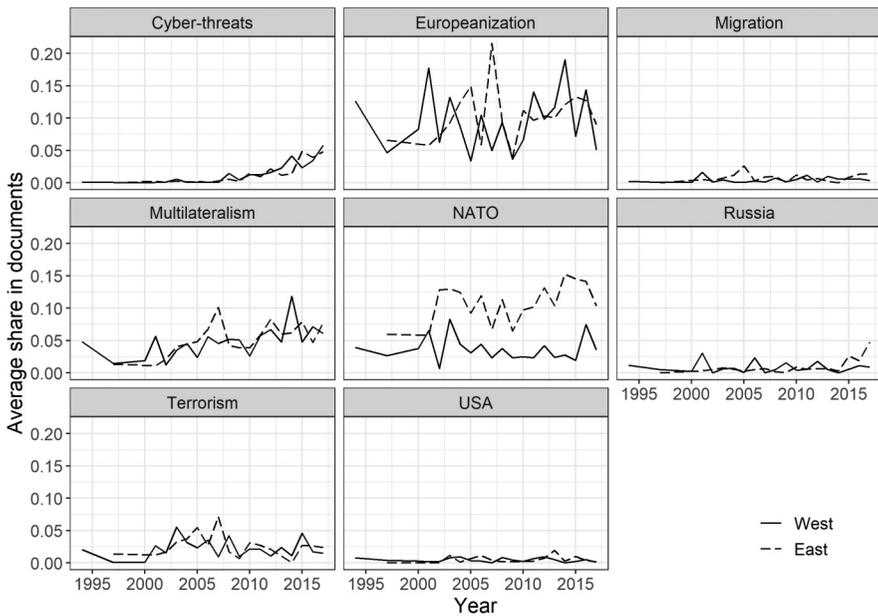
As noted, the first step is a statistical test of linear change in concept salience over time. This approach allows us to detect general trends, which might be overlooked by descriptively examining the graphical representation between 1994 and 2018. The results of the linear regressions can be found in the Online appendix. The results, summarized in the left half of Table 1, indicate that cyber-threats and multilateralism have become more salient in the last three decades in both Western and Eastern Europe, whereas Russia has only become more salient in Eastern Europe. For all other concepts, there is no evidence of a general linear trend. Analogously, we checked for general trends in the similarity of concept salience (where increasing similarity would indicate convergence, whereas a decreasing trend indicates divergence). As the right half of Table 1 shows, we find no evidence of convergence. For most concepts there is no evidence of a trend whatsoever, and heterogeneity in the salience of cyber-threats and Russia (in Eastern Europe) actually increases.

When zooming into the graphical display over time, we find that concept salience varies considerably over time as well as between Eastern and Western Europe (Figure 1). While there are some aggregate dynamics that might indicate similar reactions to foreign and security-related events in the world, there is no clear evidence of an increasing similarity of preference shifts. Furthermore, the absolute level of inter-country variation in concept salience provides no evidence of preference convergence (Figure 2).

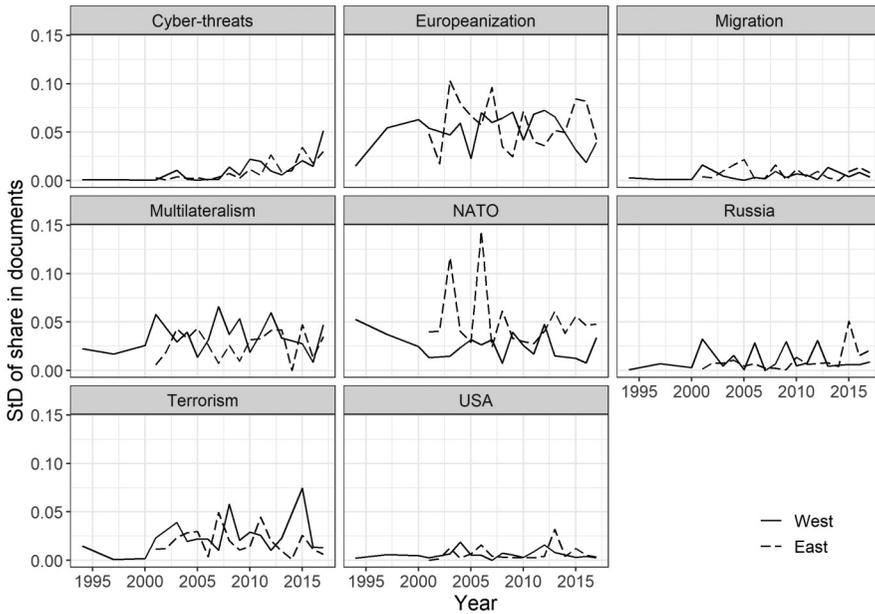
**Table I.** Linear trends in concept salience.

	Concept salience		Similarity of concept salience	
	West	East	West	East
Cyber-threats	↑	↑	↑	↑
Europeanization	→	→	→	→
Migration	→	→	→	→
Multilateralism	↑	↑	→	→
NATO	→	↑	→	→
Russia	→	↑	→	↑
Terrorism	→	→	→	→
USA	→	→	→	→

Note: Upper arrows indicate statistically significant increasing trends, lower arrows indicate decreasing trends, right arrows indicate no linear trends. In the left half of the table upper arrows imply increased saliency of the concept, in the right half of the table upper arrows imply increasing standard deviations, thus increasing divergence of concept salience.



**Figure I.** Trends in average concept salience.



**Figure 2.** Trends in the similarity of concept salience.

Beginning with the *similarity of preference shifts* in concept salience in Eastern and Western Europe, Figure 1 shows that multilateralism has become slightly more relevant over time for both groups of countries, suggesting an increased focus in both regions on cooperation in a multipolar world. *NATO* is an important concept for Eastern European countries from the 2000s onward, when most of these countries joined the alliance. In comparison, *NATO* is less salient in Western European strategy papers, gaining salience only in the context of the Iraq war and at the beginning of the Trump presidency. While the transatlantic alliance seems to play a more important role in Eastern than in Western Europe, there is no corresponding difference with respect to *Europeanization*. After the international economic and financial crisis in 2008/09, *Europeanization* has become more important for Western European countries than for Eastern European countries. This reflects the efforts of (mostly Western) European politicians to develop a common European approach in security and defense policies, which, however, dropped again in 2017. Concerning the salience of *threats*, terrorism has also been relevant continuously after 9/11. Russia is mentioned slightly more often after the annexation of the Crimea in Eastern but not in Western Europe, reflecting differences in (perceived) threat from Russian revisionism. *Cyber-threats* have only been on the agenda since the 2010s.

Turning to the trends in the *similarity of preferences*, there is essentially no convergence in concept salience (Figure 2): The standard deviation of concept salience does not decrease systematically for any concept in either region. The only exception is *NATO* in Eastern Europe, where variation between countries dropped considerably.

It seems that NATO affiliation has become a part of the Eastern European preferences since 2005. For Western European countries, we find the opposite—differences increase for *NATO* and *Europeanization*. Summarizing, we find that Eastern and Western European countries have reacted similarly to geo-political changes but seem to not converge with regard to their security and defense preferences.

The results for the second dimension analyzed here, the sentiment expressed toward the concepts, are similar to the findings for the salience dimension. As noted above, we focus in this step on *Europeanization*, *NATO*, *Russia* and *the United States*. The results for the affect component for the other concepts are reported in the Online appendix and bolster our confidence in the measurement approach. Table 2 indicates the general linear trends for all concepts. Again, we do not find clear evidence of convergence between the EU member states.

When taking a closer look at the time-series, we find some evidence that countries react similarly to prominent foreign and security-related events (Figure 3), but not increasingly so. We do not find evidence for a general trend in the variation of sentiment (Figure 4).

Europeanization receives only moderately positive sentiment scores over the whole timespan, suggesting that both in the East and the West there is little enthusiasm for increasing security and defense integration on average. For Eastern Europe the scores are even decreasing. Turning to *NATO*, evaluations were much more positive than Europeanization in the first years after 1990. With the start of the Iraq war, sentiment became much less positive but increased again afterward to similar level as *Europeanization*. For *Russia*, we see major shifts in sentiment in Western Europe, which might be attributed to two military interventions conducted by the Russian military. During the Caucasian War in 2008 and after the annexation of the Crimea and the invasion of the Donbass in 2014, *Russia* was evaluated substantially more negatively by Western European countries, but not by Eastern Europeans. The latter evidently

**Table 2.** Linear trends in concept sentiment.

	Concept sentiment		Similarity of concept sentiment	
	West	East	West	East
Europeanization	⇨	⇩	⇩	⇨
NATO	⇨	⇨	⇨	⇩
Russia	⇨	⇨	⇨	⇩
USA	⇩	⇨	⇨	⇨

Note: Upper arrows indicate statistically significant increasing trends, lower arrows indicate decreasing trends, right arrows indicate no linear trends. In the left half of the table upper arrows imply more positive sentiment of the concept, in the right half of the table upper arrows imply increasing standard deviations in the sentiment, thus increasing divergence of concept sentiment.

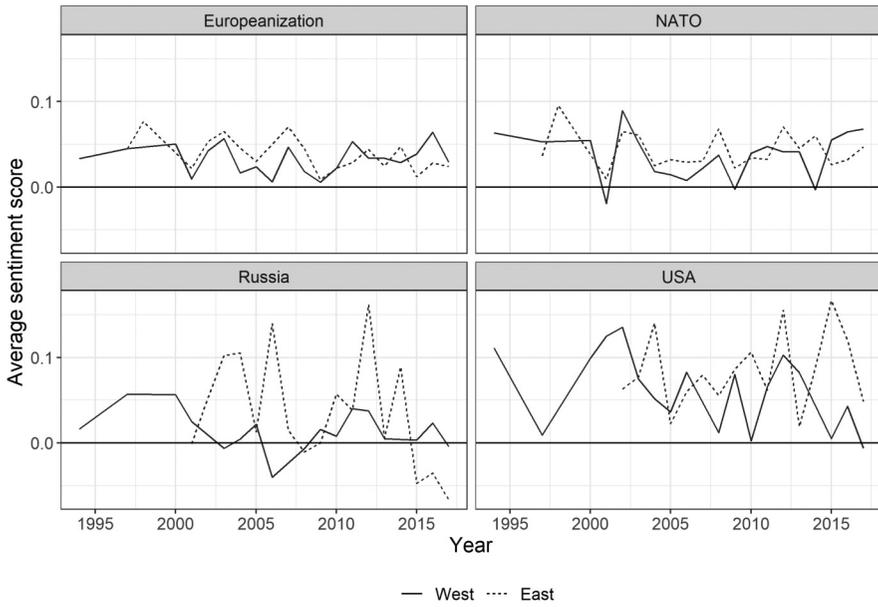


Figure 3. Trends in average concept sentiment.

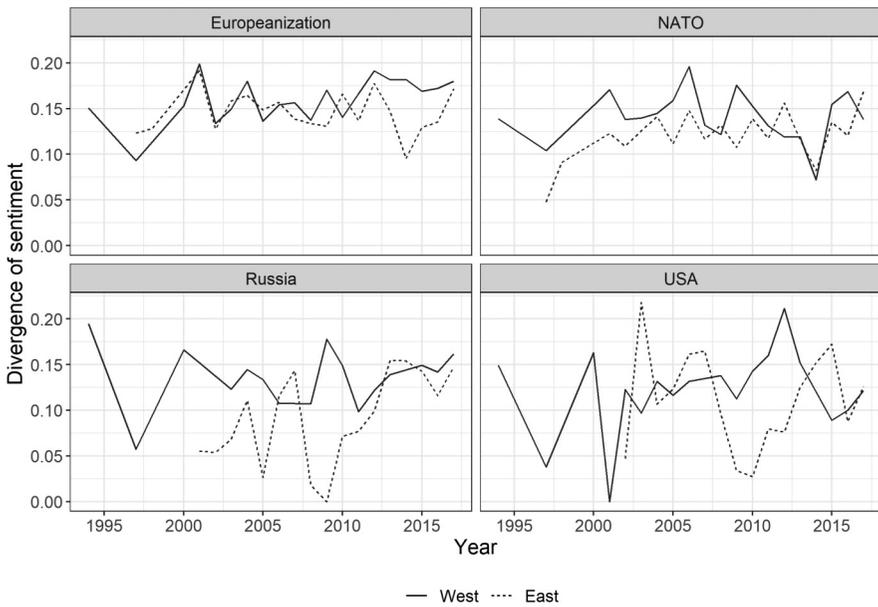


Figure 4. Trends in the similarity of concept sentiment.

avoided confrontational language toward Russia and tried to keep good relations. However, the picture changed fundamentally with the annexation of the Crimea: since then, Russia seems to have become a crucial opponent to the Eastern European countries. Turning to the *United States*, we also see variation in sentiment over time which seems closely tied to the 9/11 terrorist attacks and to changes in the US administration. Before 9/11, positive sentiment toward the US was highest among all concepts considered here. However, the evaluation of the US dropped in the context of the Iraq war both in Eastern and Western Europe. Throughout the Obama administration, sentiment toward the US increased substantially and fell again with the start of the Trump administration. This movement was more pronounced in Western than in Eastern Europe, where the US has been viewed more positively overall.

As for trends in the similarity of sentiment scores at the absolute level, Figure 4 shows no convergence in sentiment scores. This last piece of evidence fits into the consistent larger picture that has emerged from the analysis in this section. While there are shifts in average salience and sentiment scores that suggest similar reactions to geopolitical incidents both in Eastern and Western European countries, there is no evidence that this is increasingly so, and there is no evidence of European preference convergence (or divergence) at an absolute level.

### *A comparison of strategy paper content of the EU and its member states*

Given the increasing actorness of the EU (Fiott, 2018), its own stated preferences might increasingly represent a center of gravity on which member states' preferences converge. To explore this possibility, we compare the two strategy papers of the EU, published in 2003 and 2016, with member states' strategy papers published within two years before or after the respective EU paper. We include papers published earlier because their development usually takes several years. The EU papers might thus affect national strategy papers before they are published. Hence, we consider national strategy papers published between 2001/2005 and 2014/2018, respectively.

Figure 5 shows that, when it comes to the fundamental concepts of Europeanization, multilateralism and NATO, the European strategy papers are the outliers rather than the center of the distribution. Based on these findings, the EU appears to be an independent actor that adds its voice to the cacophony of the member states' security strategies. Even regarding potential security threats, the EU emphasizes migration and terrorism much more strongly than most member states but mentions Russia far less frequently. Concerning concrete concepts such as foreign actors and potential security threats, the EU is more congruent with the national preferences. Results for sentiment are shown only in the Online appendix, as they do not provide additional insights. Corresponding with the finding that no convergence has occurred between the member states themselves, Figure 5 also shows that the EU papers do not represent a center of gravity toward which the member states are drawn. In fact, while the EU was in line with most of the national strategy papers in 2003 regarding multilateralism, the spread in salience of the concept increased in 2016. Finally, when differentiating between Eastern and Western

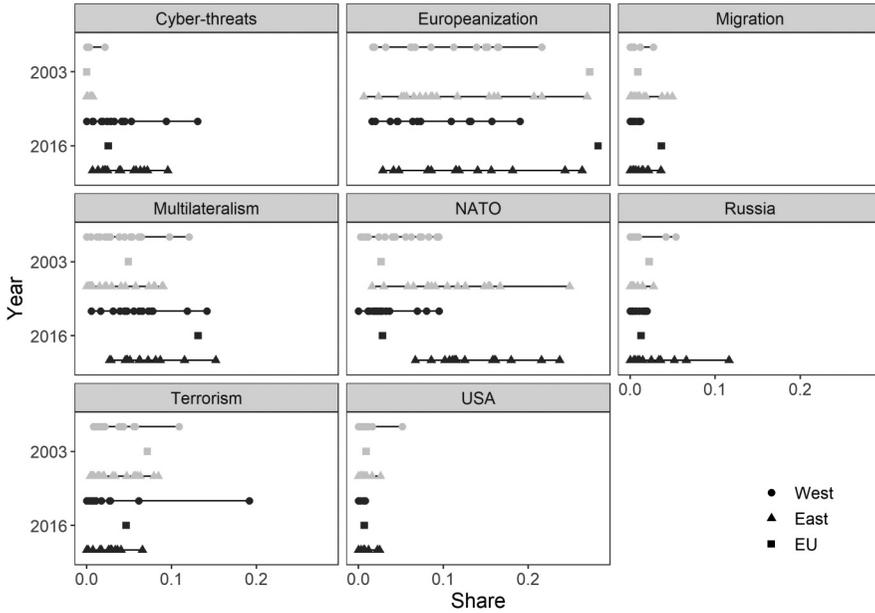


Figure 5. Concept salience in EU and national strategy papers.

European countries, it appears that the EU is rather congruent with the Western European countries but moving further away from the Eastern European member states.

### Discussion

This article explores the development of national preferences in security and defense politics of European countries between 1994 and 2018, using 163 strategy papers analyzed by a dictionary approach from the QTA toolbox. While we draw on an established data source to measure the preferences, we use a different method to analyze these data. The results suggest that there was little sigma and delta convergence of the salience and sentiment of key foreign and security concepts in that period. There are, however, some indications of similar responses to prominent foreign and security-related events. These results indicate that path dependencies, e.g. in form of strategic cultures (Giegerich, 2006; Meyer, 2005), seem to prevail in the preferences of the European countries, at least with regard to the concepts under analysis. While we acknowledge that it is not possible to measure strategic cultures using strategy papers and QTA methods alone, we deem it important to consider them when interpreting our findings. Overall, our results are more in line with the notion of an enduring “strategic cacophony” (de France and Witney, 2013) rather than the EU speaking as one in the area of security and defense anytime soon.

Against this backdrop, we also do not find that the strategy papers published by the EU are the center of the preference distribution of its member states. This is a particularly interesting finding, considering that the 2016 strategy paper was developed in

close cooperation with all member states to jointly produce a security strategy of the EU (Novotná, 2017: 5). An interpretation of these differences remains difficult, however, as they could merely reflect the more limited scope of the EU's security role at present. From this perspective comparing the strategy papers of the EU and its members states is a comparison of apples and oranges, as the EU has a special position, regardless of how similar the member states are. Further research might explore these deviations between national and European preferences in the European multi-level system, taking into account the role of national and supranational actors in articulating national and European security and defense preferences.

These conclusions are built on the results of QTA. This method can easily handle the 163 strategy papers that constitute the corpus of this analysis, whereas a qualitative analysis of this corpus would have been a Herculean task, given the amount of time and effort that comes with an in-depth analysis of these texts. Another strength of this method is its reliability and easy reproducibility, provided that code and data are publicly available. This is crucial, since the “garden of forking paths” (Gelman and Loken, 2014) is large. Researchers must decide on issues concerning data selection and cleaning, the content of the dictionaries, and the actual statistical tools to describe patterns in the resulting measures. The validity of the analysis is more difficult to evaluate. Looking at the broad preference trends shown above, we find readily interpretable patterns, which may be employed as evidence for the usefulness of the approach. When matching the developed measures with existing qualitative research (as shown in the Online appendix), we find mixed results for the abstract concepts, *Europeanization* and *multilateralism*, in particular. For more specific concepts such as *NATO*, *Russia* and *cyber-threats* the measures seem to capture the concepts more accurately. The interim conclusion we draw from this is that while the findings are too promising to abandon this endeavor, more research is needed to fully validate the application of dictionary approaches on strategy papers, especially when considering abstract concepts.

This reflects more generally strengths and weaknesses of QTA. Crucially, these methods are (currently) unable to carry on meaning created at the sentence level by the combination of regular words. By contrast, QTA shines when measuring concepts that can be expressed with individual, well-defined words or word combinations (ngrams). With respect to our research question about security and defense preferences, this applies mostly to specific actors, threats, and (some) goals. Even these concepts can only be captured at a very general level, however, as higher levels of linguistic structure must be disregarded. This constraint means that QTA methods are not useful for researchers interested in, for example, the nuanced stance expressed in a given strategy paper toward Russia. More generally, the method is more difficult to apply to complex or nuanced concepts, such as *resolve*, the *responsibility to protect*, or the *conditionality of the use of military force*. A human reader remains necessary to extract the salience and sentiment of these concepts—and will remain so in the foreseeable future. This is of course a serious limitation in research on security and defense (preference), where complex and nuanced concepts abound. Furthermore, strategy papers are published in different languages. Here, two options are available. First, dictionaries could be created for each language, which implies the risk of selecting wrong words in different languages to describe a given concept. Second, in line with our approach, one might

translate the whole corpus to English to be able to use the same dictionary for all strategy papers. Both procedures have their advantages and limitations and it is thus important to clearly articulate the reasoning behind the final decision when being confronted with a multi-lingual corpus. We reflected upon this limitation of what can be captured, as discussed above. As such, this analysis cannot claim to have analyzed convergence and divergence of all relevant concepts.

In sum, this article shows that a dictionary approach can be valuable in longitudinal cross-national analyses of security and defense preferences. It thus allows to address important research questions—including the one addressed here—that are more difficult or impossible to investigate using other methods. As such, this study adds to the current discussions of strategic autonomy of the EU and of the circumstances under which it is reasonable to expect the EU member states to speak with one voice. Our results suggest that it might be unreasonable to expect quick progress on this pressing European issue anytime soon. QTA may also be fruitfully used as a first step, to be followed by in-depth qualitative analyses of patterns. Future research should carefully explore the strengths and weaknesses of this and other QTA methods to further enhance the ability to measure security and defense preferences and validate our diagnosis of an absence of convergence of these preferences in Europe.

### **Author contributions**

Konstantin Gavras and Matthias Mader contributed to acquisition and analysis of the data, and the interpretation of the results. All authors contributed equally to drafting and critically revising the article; and agreed to be accountable for all aspects of work ensuring integrity and accuracy.

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### **ORCID iD**

Konstantin Gavras  <https://orcid.org/0000-0002-9222-0101>

### **Supplemental material**

Supplemental material for this article is available online.

### **Notes**

1. The work by Biehl et al. (2013) comes closest. But while that impressive volume looks at the preferences of all EU28 countries, it focuses on cross-sectional differences and does not systematically account for the temporal dimension.

2. Unlike other recent research (Becker and Malesky, 2017), we do not claim to be able to measure strategic culture on the basis of strategy papers. The concept of strategic culture is generally considered to be more encompassing. See for example Libel (2020) for a recent review of the conceptual debate. Very much in line with a “disaggregation approach” (Becker, 2021), however, we do believe to capture an essential component of strategic culture, which should make our contribution of interest to the field of strategic culture research.
3. This assumption is common in the literature (e.g., Becker and Malesky, 2017) and justified by the data-generating process, i.e. the motives and process of publishing these strategy papers. Publishing strategy papers on a regular basis allows countries to communicate their current general security and defense policy orientation and medium-term strategy both to the national and international audiences (Stolberg, 2012).
4. As a stylized example, the annexation of Crimea might have triggered a uniform increase in Russian threat perceptions throughout Europe. There would be no convergence in this scenario, as some countries would shift from low to medium threat perception, while others from medium to high, etc. The difference in threat perceptions would remain, but on a higher average level. In contrast, the Crimean crisis may have led states to uniformly conclude that what they experienced represented a high level of Russian threat (regardless of how strongly they perceived the threat beforehand).
5. The principle of deducing salience from frequency of use is well established in the content analysis literature. See, for example, the literature on party manifestos (Robertson et al., 1987).
6. Furthermore, even if the goal of this article were to measure a single dimension, the use of unguided machine-based algorithms can pose serious challenges. Becker and Malesky (2017), for example, use a scaling procedure to arrange strategy papers from European countries on a Europeanism-Atlanticism dimension. The British and French documents these authors used as anchor points are probably the most reasonable choices possible, but the general point remains that any differences between the anchor documents influence the scaling results—not only those related to the concept of interest. An inspection of raw data reported in the appendix of their article (Becker and Malesky, 2017) casts some doubts on the descriptive validity of the measures.
7. The R script and the data set to replicate the results from these analyses are available from Harvard dataverse (blinded).
8. The dictionaries are reported in the Online appendix. Corresponding with the idea that more complex measures are more difficult to capture with a dictionary approach, dictionary construction of complex concepts proved more difficult, as the range of potentially relevant key words is larger and their selection less straight forward.
9. We replicated the results using the Lexicoder sentiment dictionary (Young and Soroka, 2012). The Lexicoder sentiment dictionary has been developed for news coverage and legislative speech and is thus applicable to our case. However, in contrast to the AFINN dictionary, it does not include valence scores, but only a dichotomous classification of negative and positive words. The results are shown in the Online appendix. They are very similar to those reported here.
10. We further differentiate Western countries in Northern (Austria, Belgium, Germany, Denmark, Finland, France, United Kingdom, Luxembourg, Netherlands, Sweden and Ireland) and Southern (Cyprus, Spain, Greece, Italy, Portugal and Malta) European countries, since it is reasonable to assume nuanced differences between these two groups of countries as well (Frankenthal, 2019; Soler I Lecha, 2010). The Online appendix provides the results for

these groups and indicate large similarities between Northern and Southern European countries, but with important differences for some concepts (e.g. saliency of terrorism and sentiment toward Europeanization and USA).

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