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Making Data Visualizations, Contesting Security: Digital Humanities Meet International Relations

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This article brings debates about data visualization in digital humanities in conversation with critical security studies and international relations. Building on feminist approaches in digital humanities, we explore the potential and limitations of data visualization as a critical method for research on (in)security. We unpack three aspects of making data visualizations by specifying “making” in this context as working, orienting, and critiquing. Making data visualizations as a methodological device is oriented by questions about the contestation of security and orients research by provoking new questions about practices of critique. Empirically, we situate data visualizations within British parliamentary debates about the Government Communications Headquarters (GCHQ), the UK’s signals intelligence agency, which has garnered much public attention in the wake of the Snowden disclosures of transnational mass surveillance. We argue that data visualization in the parliamentary archive can destabilize dominant understandings of security, problematize narratives of security actors and oversight, and attend to the uneven presence of critique and contestation within and beyond parliamentary debates.

Cet article met en rapport les débats relatifs à la visualisation des données en humanités numériques avec les études critiques sur la sécurité et les relations internationales. En nous appuyant sur des approches féministes dans les humanités numériques, nous nous intéressons au potentiel et aux limites de la visualisation des données comme méthode critique de recherche sur la sécurité et l’insécurité. Nous développons trois aspects de la fabrication de visualisations de données en précisant la signification de « faire » dans ce contexte comme travail, orientation et critique. Faire des visualisations de données comme outil méthodologique s’oriente vers des questions quant à la contestation de la sécurité et oriente la recherche en suscitant de nouvelles questions sur les pratiques de critique. Sur le plan empirique, nous situons les visualisations de données au sein des débats parlementaires britanniques relatifs au GCHQ, l’organisme britannique de renseignement sur les transmissions, placé sous le feu des projecteurs à la suite des révélations d’Edward Snowden sur la surveillance de masse transnationale. Nous affirmons que la visualisation des données dans l’archive parlementaire peut déstabiliser les perspectives dominantes sur la sécurité, rendre des récits des acteurs de la sécurité et du contrôle problématiques, et traiter de la présence inégale des critiques et de la contestation au sein des débats parlementaires et au-delà.

Este artículo pretende unir los debates sobre la visualización de datos en las humanidades digitales con los estudios críticos de seguridad y las relaciones internacionales. Estudiamos, partiendo de la base de los enfoques feministas dentro de las humanidades digitales, el potencial y las limitaciones de la visualización de datos como método crítico para la investigación en materia de (in)seguridad. Desglosamos tres aspectos de la creación de las visualizaciones de datos definiendo «hacer» en este contexto como trabajar, orientar y criticar. Para hacer visualizaciones de datos, en su papel de dispositivo metodológico, es necesario enfocarlas usando preguntas sobre la impugnación de la seguridad. Al mismo tiempo, es necesario plantear nuevas preguntas sobre prácticas de crítica para orientar la investigación. De forma empírica, situamos las visualizaciones de datos dentro de los debates parlamentarios británicos acerca de la GCHQ, la agencia de inteligencia de señales del Reino Unido, la cual ha atraído mucha atención pública a raíz de las revelaciones de Snowden sobre la vigilancia masiva transnacional. Argumentamos que la visualización de datos en el archivo parlamentario puede desestabilizar la comprensión predominante en materia de seguridad, así como problematizar las narrativas de los agentes de seguridad y la supervisión, y atender a la presencia desigual de la crítica y la impugnación tanto dentro como fuera de los debates parlamentarios.

Introduction: From Seeing to Visualizing Security

Critical approaches to security studies (CSS) and international relations (IR) have offered nuanced reflections on the production, circulation, and performativity of visual images and visual artifacts (for example, Williams 2003; Hansen 2011; Austin 2016; Leander 2017; Bleiker 2018;

Vuori and Saugmann 2018; Adler-Nissen, Andersen, and Hansen 2020). As Roland Bleiker (2018, 17) has summarized it in the context of the attacks of September 11, 2001, “[t]here is no way to understand the origin, nature, and impact of the event without understanding the role of images.” Relatedly, IR scholars have engaged with visual methods

through the production of films, documentaries, and photographs (see Weber 2011; Van Munster and Sylvest 2015; Harman 2019; Lisle and Johnson 2019). Adam Ferhani and Jonna Nyman (2023) have rendered visual methods as “practices of image-making” and not just image analysis.¹

Despite these methodological interventions, practices of making visuals have remained far and few between, so that Frank Möller, Rasmus Bellmer, and Rune Saugman (2022, 9) rightly summarize most critical research on visibility as coming “*after* image production.” In this paper, we explore the potential and limitations of data visualization as a critical method for research on (in)security. More than image making, data visualization is a process of transforming data into a graphic representation (Manovich 2010; D’Ignazio and Klein 2020).

While mainstream security studies and professional security practices are replete with graphs, bar charts, and other statistical visualizations of data, CSS scholars have eschewed engagement with methods of data visualization, partly due to its association with quantitative data and partly due to its role in security governance.² By contrast, they have largely deployed qualitative methods and engaged with visual methods as pre-eminently interpretive and qualitative (Salter and Mutlu 2012; Shepherd 2013; Aradau et al. 2015; De Goede, Bosma, and Pallister-Wilkins 2019). More recently, several CSS scholars have challenged the binary of qualitative versus quantitative methods by showing how mapping can transcend these methodological divisions (Loughlan, Olsson, and Schouten 2014; Martin-Mazé and Perret 2021). Beyond IR, activists and academics have deployed data visualizations and related digital maps to contest, evidence, and shed light on state violence and the effects of security practices. Forensic Architecture is perhaps best known for its work mobilizing digital data and tools to contest and subvert global security practices (Weizman 2017).

We contribute to the agenda on critical methods and CSS by engaging with research in digital humanities, which has paid close attention to practices and methods of data visualization (Münster and Terras 2019). Data visualization is not just a visual artifact, but a method of representation and interpretation. Data visualization can work with any form of data—whether text, images, numbers, or sound. Digital humanists also attend to how visualization brings new interpretations and worlds into being. However, critics of data visualization contend that it combines the problems of discriminatory data with those of computational methods under the mantle of objectivity and neutrality. As Helen Kennedy and Rosemary Hill poignantly put it, “[d]ata visualizations are not neutral windows onto data: they privilege certain viewpoints, perpetuate existing power relations and create new ones, and, as such, they do ideological work” (Kennedy and Hill 2017). In response to these criticisms, digital humanities scholars have developed new perspectives on data visualization by proposing ethical workflows (Hepworth and Church 2018), data feminism (D’Ignazio and Klein 2020), and postcolonial and abolitionist data visualizations (Battle-Baptiste and Rusert 2018).

Drawing on these debates in digital humanities, we approach the special issue editors’ invitation to expand the praxis of IR through “making data visualizations” as a methodological device oriented towards the critique of security. We started to explore data visualization as part of our re-

search on how contestations of security, particularly around the activities of intelligence agencies, emerge and transform over time in parliamentary debates in the United Kingdom (UK). What kinds of critique are present in these contestations, which ones are deemed acceptable or unacceptable, and which ones perdure or are dismissed out of hand?

These trajectories are difficult to analyze qualitatively given that parliamentary debates about security extend over decades and are dispersed across different areas, from foreign policy to surveillance, expanding over many texts. The parliamentary archives provided us with a historical view on these debates where otherwise systematic written material has been sparse. In CSS, Andrew Neal has approached the UK Parliament as a paradigmatic case study for the “normalisation of security politics,” given that the expansion and translation of security to more and more policy arenas have led to “more legislative scrutiny, topical debates, select committee inquiries and other parliamentary instruments” (Neal 2019, 30). Like Neal, we are interested in understanding how debates about security and intelligence agencies have garnered attention and become the object of debate over time. However, we also want to understand which arguments and critiques are dominant and taken-for-granted, and which ones are ignored, ridiculed, marginalized, or absent.

As the UK Parliament has become a key actor that formally holds security and intelligence agencies to account, it is a significant site where critiques of security have become articulated, but also dismissed and discarded. Given the breadth of the archive and debates about security, we have focused our inquiry on the Government Communications Headquarters (GCHQ), the UK’s signals intelligence agency, which the Snowden disclosures have shown to be central in global mass surveillance and security practices, particularly through its cooperation with the United States (US) National Security Agency (NSA). As well as using the parliamentary archive to examine power relations and how the dominance of security discourses becomes entrenched and expanded over time, we use it to trace the transformations of critiques of security. We do not suggest that parliaments are sites of radical critiques of security. In the UK, “the executive overlaps with the legislature, is constituted from it and acts through it” (Neal 2019, 128). We argue that data visualization in/with/of the parliamentary archive can destabilize dominant understandings of security and can help complexify narratives about the transformation of security, the role of intelligence agencies, and how security practices are contested or critiqued.

Our main aim is to introduce “making data visualizations” as a critical method (Aradau and Huysmans 2014) and discuss its potentials and limitations for CSS and critical IR. To this purpose, the paper starts by situating data visualization within debates in digital humanities and articulating its methodological, critical, and political aspects. While many of the concerns about methods in digital humanities resonate with critical approaches in IR, digital humanities scholarship also enables new questions and practices of “making” as critical interventions. In the following three sections, we unpack three aspects of making data visualizations by specifying “making” in this context as working, orienting, and critiquing. Thus, we both supplement and specify the more general vocabularies of practice through doing and enacting that have been used in CSS and critical IR.

The first section, “making as working,” draws on data feminism to recenter the question of (invisible) labor in practice-led research. Invisible labor has been key to feminist approaches, but it has often been eschewed in the lit-

¹Ferhani and Nyman (2023) offer a comprehensive typology of visual methods in CSS and IR and propose a new method of interpretive photography.

²See, for instance, the Snowden archive. IR scholarship has also made use of statistical representations and network analysis (whether visualized or not), but these have been the promise of objectivity and “trust in numbers” (Porter 1996).

erature on design, information, and data visualization. In IR, questions of labor have not been central to discussions of methods. Secondly, we situate “making as orienting” to articulate visualization as a method rather than (just) a visual artifact. “Making data visualizations” orients critical research by allowing us to move from what is dominant to what appears small, marginalized, dismissed or ignored in parliamentary debates about security. Thirdly, we connect “making” to the project of critique—understood both as disturbing taken-for-granted assumptions and challenging power relations—“making as critiquing.” We conclude by revisiting the relation between “making” and “unmaking” for knowledge production in critical IR praxis and CSS.

Data Visualization: Methodological, Critical, Political

Digital humanities scholars have highlighted the performativity and power of data visualization—what kinds of worlds it enacts and how it renders power asymmetries and differences. In so doing, they have challenged the reductive narratives of objectivity, clarity, and rigor that have framed many statistical representations of data. Perhaps the best-known historical practitioner of data visualization, US statistician Edward R. Tufte, captured it under the injunction to “[a]bove all else show the data” (Tufte 2009, 17). For him, clutter and visual grandeur were to be avoided, earning him the moniker of the “da Vinci of data” by the *New York Times* (Shapley 1998). A textbook on information visualization summarizes the approach as “complex ideas communicated with clarity (no ambiguity or confusion in graphs), precision (truthful results and distortion-free presentations), and efficiency (a minimal amount of chart ‘junk’)” (Chen 2017, 10).

While clarity can be one of the aims of data visualization, digital humanists agree that it is not necessarily the most important one. For feminist scholars Catherine D’Ignazio and Lauren Klein, clarity, precision, and efficiency are not always desirable, although they do not reject these as important elements of visualizations. D’Ignazio and Klein situate data visualization as part of projects that challenge power and oppression. They offer the example of the Anti-Eviction Mapping Project in San Francisco whereby a collective of activists, researchers, “data nerds,” and artists started collecting data on what happens to people after they are evicted by their landlords, and who is responsible for “systematically evicting large blocks of the city” (D’Ignazio and Klein 2020, 125). Rather than one map, the Anti-Eviction Mapping Project has produced a multitude of different digital maps. Some of these maps visualize patterns of displacement; other maps are “intentionally designed *not* to depict a clear correlation between evictions and place” (D’Ignazio and Klein 2020, 127–8). The maps are part of a wider archive that the Anti-Eviction project has produced, which also contains “over one hundred oral histories, dozens of videos, numerous webpages on serial evictors, several reports, zines, digital light projections, community events and more” (McElroy 2018, 5–6). Visualizations can take many forms and they can differentially aim for cognitive clarity, confusion, or dissonance, depending on the critique they aim to sustain and the political projects they envisage.

Moreover, in digital humanities, visualization is not constrained to the representation of quantitative data, as it is also concerned with text and other media such as images and videos. In that sense, “data can be anything that can be subjected to categorization, abstraction, and translation into graphical representation: persons, places, documents, relations, sentences, salaries, to mention some ex-

amples” (Kennedy and Engebretsen 2021, 21). Visualization cuts across distinctions between qualitative and quantitative methods, text and image, words and numbers. In IR, scholars have also recently deployed the distinction between image and visualization as a way of distinguishing between “output” and “techniques of image-production” (Möller, Bellmer, and Saugmann 2022, 7). IR scholars have tended to focus on outputs as artifacts, while the work of image-production has been largely associated with artist-activists. Filmmaking has been an exception, but it has remained rather limited as a method of research, given the difficulties of its production. Sophie Harman (2019, 54–5) has recounted the difficulties of making a film under the inequalities of transnational regimes of labor. Other digital visual methods such as satellite imagery and geolocation mapping have been shunned given their connections with militarized and securitized governance. However, IR scholars have started to engage more with image production, for example, through “reenacting” methods of cluster analysis based on satellite and geolocation data of the Azraq and Zaatari camps in Jordan (Rothe, Fröhlich, and Rodriguez Lopez 2020) or combining photovoice methods and Google Map/OpenStreetMap in participatory research with displaced populations in Somalia (Chonka, Edle Ali, and Stuvøy 2022).

As a methodological device, data visualization raises epistemic and political questions. For some scholars, digital tools hailed the emergence of more “objective” and large-scale work in digital humanities (e.g., Manovich 2018; Guldi 2019). Inspired by hermeneutical, feminist, and postcolonial perspectives, other digital humanities scholars have challenged these assumptions. For example, Johanna Drucker has proposed to situate data visualizations within an epistemology of “interpretative knowing—partial, situated, enunciative (speaking and spoken positions), subjective, and performative” (Drucker 2020, 49). In this hermeneutical approach, visualization is not just a means to an end or an end product. Rather, data visualizations are methods of exploration and argumentation, working against “information that (...) appears absolute” (Skeels et al. 2010, 70). Therefore, visualization needs to be understood as part of a larger effort to rework data—both qualitative and quantitative, both text and image—and not simply “show” it. It is messy work and an open-ended encounter with the data that does not neatly delimit “making” and “thinking.” What is key here is not to separate “visual representation ... from visual explorations themselves,” but to enable a “fluid process of developing and modifying visualizations” (Hinrichs, Forlini, and Moynihan 2016, 437).

In digital humanities, data visualization as a method has been further developed and reconfigured through feminist approaches that attend to the situatedness of knowledge production and circulation, as well as and the underpinning power relations. Like CSS and IR, digital humanities are committed to the critical and political dimensions of methods. D’Ignazio and Klein explain feminist data visualization projects as having the goal to “encourage the development of a range of alternative visualization practices that better emphasize the design decisions associated with data and its visual display” (D’Ignazio and Klein 2016, 1). In their seminal book, *Data Feminism*, they crystallize this approach into seven principles for working with data: examine power; challenge power; elevate emotion and embodiment; rethink binaries and hierarchies; embrace pluralism; consider context; make labor visible (D’Ignazio and Klein 2020, 17–18).

How and what data visualization makes visible and invisible, legible and illegible, intelligible and unintelligible is

a political intervention that is not limited to academic disciplinary distinctions. Data visualization is thus particularly conducive to collaborative approaches of making, which cut across disciplinary and other social boundaries. Making visualizations can be part of a research practice that challenges the exclusion of people whose lives have been datafied or who are living through the consequences of datafication, including that of security practices and digital surveillance.

Data visualization as a methodological device fosters multiple perspectives on data, while being attuned to the political dimensions of data and data work (D’Ignazio and Klein 2016; D’Ignazio and Klein 2020). A feminist approach adds the political dimensions of power and labor to the hermeneutical ones of situatedness, complexity, uncertainty, and partiality of knowledge. Digital humanities scholarship does not only want to offer new methodologies, but to also highlight tensions in data visualization: between claims to objectivity and situatedness, between totalizing knowledge and multiple perspectives, and between neutrality and political commitment. Data visualizations are critical in the ways they contest existing power relations, oppression, and inequality. For us, data visualization as a method helps make visible critical discourses across time and areas that might not have been immediately understood as areas of national security.

Drawing on digital humanities and feminist engagements with visualization as a method, we attend to how dominant security discourses are disrupted or disturbed. More specifically for CSS, we understand data visualizations as methodological devices that orient research towards the contestation and critique of security. These contestations are not exceptional or constrained to academic scholarship but can be understood as everyday practices in which many actors display their “critical capacities” (Boltanski 2011; Gadinger 2016; Austin, Bellanova, and Kaufmann 2019, 7). By using visualizations on a textual corpus, we propose to make, remake, and unmake the legibility of security, its contestation, and its critiques. While data visualization does not entail such extensive networks of labor, financing, and university procurement regimes as filmmaking, it raises similar questions of labor, power, and critique, as we will see in the following sections.

Making, remaking, and unmaking is made possible through data visualization as a malleable and unfinished process. Digital humanists have proposed to approach data visualization through the metaphor of “sandcastles,” which “emphasizes visualization as a process and highlights the value of its byproducts—transient, unstable, often unfinished, and quickly discarded artifacts which are both manifestations and drivers of a (visual) thinking process through data” (Hinrichs, Forlini, and Moynihan 2018). It is this critical, unstable, and unfinished potential of data visualization that we aim to mobilize to situate the contestation of security within historical and political sites.

Making as Working: The (Invisible) Labor of Data Visualization

In this section, we draw on feminist legacies of theorizing labor in digital humanities to elaborate the meaning of “making data visualizations” as work. While CSS has emphasized the processes of enacting, doing, constructing, designing, crafting, or otherwise making, feminist scholarship asks us to take the labor of making seriously. D’Ignazio and Klein (2020) distill this approach into the injunction to “make labour visible.” This section explores tensions that

arose from our work on data “cleaning” as an integral part of visualizing.

Data visualizations start with data, but data is neither given nor “raw” (Gitelman 2013). It needs to be “made” and “cleaned” to address the research question and fit the requirements of various data visualization techniques. D’Ignazio and Klein remind us that “[n]o dataset or analysis or visualization or model or algorithm is the result of one person working alone” (D’Ignazio and Klein 2020, 10). Data is produced, collected, archived, stored, cleaned, stored again, processed, and so on. Drucker proposes to rename data as *capta*—what needs to be made into data for analytical purposes. By supplementing data with *capta*, she aims to “dispel the assumed neutrality of data production” (Drucker 2020, 53). While new data can be generated for the purposes of visualization, we have used data that had already been “made”—the digital archive of debates in the UK parliament.

Making data analyzable is a step that is frequently ignored when the focus is on the “end product.” Accessing and cleaning the data is always the first step in the work on data visualizations. This covers different forms of collaborative labor: the labor of collecting and structuring the data, the interpretive labor of deciding what to select and how to represent different categories, what to include and what to exclude from the analysis, and the labor of relating research questions and empirical problems. Various data makers have been involved in producing the datasets we engage with in this article, from those who transcribed the parliamentary debates to those involved in their digitization, and those working on the many stages of sculpting the dataset—processes that are often swept under one stage named as data “cleaning.” Interpretative decisions need to be made throughout the process, both in curating the data and selecting aspects of the data to visualize. Working from and with the textual parliamentary material through these various connected processes plays a fundamental role in the production of visualizations.

The parliamentary archive is largely textual and as such unstructured data. Several digital humanities projects working with the UK Parliamentary Archives have transformed these texts into data. Therefore, multiple datasets from the archive already exist. We employed one created by Evan Odell, a data scientist who produced the dataset out of a commitment to open data, as he notes on his website.³ As we are interested in how critiques of security are articulated, taken up, or reshaped, we only used the speech text and year in Odell’s dataset. First, we filtered this very large database to keep only those speeches containing the word “GCHQ.” In a further manual curation step, we expanded the filtered speeches and included the whole debate linked to them. This work of debate selection had to be done manually, as there is no direct link between an MP’s speech and a debate in the parliamentary metadata, as far as we could discern. This, however, led to a large diffusion of the arguments in the selected debate texts, as the speeches on GCHQ are often part of larger debates on diverse parliamentary matters. Therefore, we only selected those debates where GCHQ appears in the top 10% quantile of word frequencies. We ended up with a folder containing all GCHQ-

³<https://evanodell.com/projects/datasets/hansard-data/>. The dataset we used covered the period 1979 to 2017. Recently, Odell has updated the dataset. However, given the extensive work of data production we needed to undertake, it was not possible to include the latest dataset. Our dataset also does not include select committee activity, unless presented and debated in Parliament. The dataset we curated for the GUARDINT project is available at <https://doi.org/10.18742/24407950>.

4738	1985-12-20.681.1	1102	KHAD	1985	#	#N/A	
4739	1985-12-20.681.1	1102	the Home Office	1985	#	#N/A	
4740	1985-12-20.681.1	1102	the European Community	1985	#	#N/A	
4741	1985-12-20.681.1	1102	Kremlin	1985	#	#N/A	
4742	1985-12-20.681.1	1102	Community	1985	#	#N/A	
4743	1985-12-20.681.1	1102	Comecon	1985	#	#N/A	
4744	1985-12-20.681.1	1102	Comecon	1985	#	#N/A	
4746	1985-12-20.681.1	1102	Kremlin	1985	#	#N/A	
4747	1986-03-07.623.1	1103	the European Court of Human Rights	1986	#	#N/A	debate about rights inc trade union rights
4748	1986-03-07.623.1	1103	International Labour Organization	1986	#	#N/A	
4754	1986-03-07.623.1	1103	House of Lords	1986	#	#N/A	
4755	1986-03-07.623.1	1103	Labour Government	1986	#	#N/A	
4757	1986-03-07.623.1	1103	NCB	1986	#	#N/A	in the context of trade union rights but not GCHQ specific - example of miners
4758	1986-03-07.623.1	1103	The Guardian	1986	#	#N/A	The Guardian
4761	1986-03-07.623.1	1103	Murdoch	1986	#	#N/A	
4762	1986-03-07.623.1	1103	The Guardian	1986	#	#N/A	The Guardian
4763	1986-03-07.623.1	1103	Conservative	1986	#	#N/A	every Conservative Member
4767	1986-03-07.631.4	1104	Labour Government	1986	#	#N/A	more about workers/unions/Tony policies
4768	1986-03-07.631.4	1104	Labour Government	1986	#	#N/A	
4769	1986-03-07.631.4	1104	here's	1986	#	#N/A	
4779	1986-03-07.631.4	1104	the Health and Safety Executive	1986	#	#N/A	also attended march where GCHQ workers were
4781	1986-03-07.631.4	1104	the Health and Safety Executive	1986	#	#N/A	
4782	1986-03-07.631.4	1104	the National Coal Board	1986	#	#N/A	iclude too? Also on march
4783	1986-03-07.631.4	1104	the National Coal Board	1986	#	#N/A	
4784	1986-03-07.631.4	1104	Labour Government	1986	#	#N/A	
4785	1986-03-07.631.4	1104	NUM	1986	#	#N/A	
4786	1986-03-07.631.4	1104	the Union of Democratic Mineworkers	1986	#	#N/A	
4787	1986-03-07.631.4	1104	the National Coal Board	1986	#	#N/A	
4790	1986-03-07.631.4	1104	Lloyd's	1986	#	#N/A	
4791	1986-03-07.631.4	1104	Cabinet	1986	#	#N/A	
4793	1986-03-07.631.4	1104	Lloyd's	1986	#	#N/A	

Figure 1. Intermediary stage of data work on organizations mentioned in the debates.

related speeches and their debates as separate small text files, as well as a combined large file with all the speeches for easier searching. This work was undertaken with the help of two King's Undergraduate Research Fellows in 2020.

This work of selection and decision-making (re)shaped the data. Constantly returning to the textual archive to prepare computational processing, we had to decide on what is considered *relevant* to the GCHQ debates and what should be left out, even after our initial “filtering.” Some entries relating to historical debates listed various issues, including GCHQ, but were otherwise unrelated. The speeches accompanying the incoming Labor government of 1997 were often long, with many speeches having no discussion relevant to GCHQ, but still captured in the data. At other times, GCHQ was listed among other unrelated topics in the parliamentary agenda or discussed in debates but not included in the data. In some speeches, GCHQ was referenced marginally or amongst speeches relating to government policies, for instance, or to showcase patterns of government cruelty or minister positions. We kept this data for textual analysis, as it allowed us to understand connections made with security. Additionally, many debates brought up the question of GCHQ to demonstrate patterns in government policy or collective resistance but did not specifically center around GCHQ. This was the case especially around earlier discussions concerned with labor and union rights, where the GCHQ trade union ban was a recurrent example and connector for other union struggles.

To understand the rhetoric that might be mobilized in contesting security, we were not just interested in words or phrases, but also in entities. Entities such as places can be mapped to explore spatial relations. Organizations like the “Commonwealth,” locations like “Guantánamo,” and events like the “Falklands War” are identified in a semi-automated way with the spaCy environment⁴ to help situate the debates and understand their relevance and significance. Digital humanities have also emphasized that one should not read anything fixed into words by themselves. When preparing visualizations, Drucker highlights that what appears as simple word counting can be a complex interpretative act: “Even identifying a term requires selection—should it be just the word, its variants, the word with one or two words collocated around it, and so on” (Drucker 2020, 46). Preparing and

making data visualizations requires diverse forms of interpretation and standardization.

Entities can thus be helpful in contextualizing the significance and historical relevance of speeches, although they are difficult to work with. On the one hand, we had to make innumerable decisions on what counts as an entity such as an organization, event, or location. On the other hand, we had to standardize terms that are used differently in oral language (and could have been transcribed differently) to one single form that is computationally legible. This process entailed systematizing entries by grouping categories referring to the same thing under the same entry, for example: “Home Department” and “Home Office” was made into one entry “Home Office,” or “US Government,” “American Government,” “US Administration,” and “The Americans,” was made into “US Government” (see Figure 1). Much of this largely manual work was done by the student assistants and researchers working on the GUARDINT project and would likely not have been possible without funding.⁵ This work on structuring and sculpting the data is fundamental to the visualizations and extended over more than 2 years.

After the selection of relevant debates and separate work on organizations and events, we conducted further extensive “cleaning” work on the text of the parliamentary debates. We removed standard English stop words like “the” or “do” that do not add meaning as well as words that are frequent only in the UK parliamentary archive such as “honourable” or “member.” These are used in the introduction of speeches but are not directly relevant for questions of security. Furthermore, where possible, we paid particular attention to replace relevant bigrams and trigrams with single words. For instance, the bigram “security service” is made into “security_service.” At the end of all this data-making work, making text into data for/as visualization, the corpus contained 1,284 speeches and about 770,000 words. The median sentence had 19 words. This is fairly long and can either be a sign that the speeches are held within a highly formal context requiring preparation or—what is more likely given the context of the archive—that the transcript struggled with the oral character of the speeches.

Data preparation work for visualization from texts consequently involves many reductions like the removal of surplus

⁴spaCy is an open-source library for Natural Language Processing, available at <https://spacy.io/>.

⁵GUARDINT (“Intelligence and oversight networks: Who guards the guardians?”) was a collaborative project between the UK, France and Germany funded under Open Research Area (2019-2022). <https://guardint.org/>.

information and deleting observations that cannot be represented, which critical scholars might feel uncomfortable with. It also involves addressing invalid expressions and dealing with missing data. At the same time, it can also surface “small” words such as modal verbs and prepositions, which are often ignored in analyses of security. All this needs to be carefully considered and discussed before moving onto the work of categorizing data. Making data visualizations means continuously deciding on what should be considered relevant, and how relevance is translated by employing automated, semi-automated, and fully manual labor.

Our questions about contestations of security and decisions on data production also shaped decisions on which types of visualization to use. As the data includes a date-time dimension and we were interested in change, we chose timeline visualization as one of the methods to work with. Other visualization types such as treemaps help highlight the relationality of data—in our case how words might be related to each other, as do other visualization types such as dumbbell graphs. While much of the work here is technical and requires specific skills in modifying variables and fitting data, we discussed together which different types of visualization work best to address our questions on contestation.

Although there was a division of labor in our work, the (re)thinking, debating, and discussing of relevance and significance also dissolved the boundaries of these divisions. Data is always made based on a process of inclusion and exclusion of items, and its categories are messier than often assumed. Our experience has shown that visualization requires lengthy and distributed work on data as digital humanists know well. Making as working is of course not unique to data visualizations. Data visualization, however, highlights different questions about the labor that is made visible and carries credibility and technical skills, as well as work that is deemed less skilled, boring, or simply made invisible. In that sense, making is crucially mediated through working, and these labor relations, visibilities, and invisibilities are crucial to all forms of knowledge production, whether through image-making or other textual production. Making data visualizations is also a specific methodological device, as we show in the following section through “making as orienting.”

Making as Orienting: Data Visualization as Methodological Device

We did not start this project from questions of data visualization, but from an inquiry into how critiques of security and digital surveillance by intelligence agencies are articulated, circulated, accepted, silenced, and ignored (see Aradau and Mc Cluskey 2022). In this section and the following one, we explore three types of visualizations, starting from word counts, then moving to relations between words, and finally to an interactive visualization of relations between words across different time periods. These are not the only types of visualizations that can be created from the archival text, but they are the three we have selected as they have been key to our methodological journey and highlight some of the insights that visualizations offer into the contestation of security.

First, we split the corpus into several historical periods or “epochs” to be able to trace transformations in the language around security and GCHQ. Our decisions on how to draw the boundaries around these “epochs” are built on IR and CSS discussions of the transformations of security. We relied on an event-based approach, where boundary lines are de-

termined by interpretations of key events for security—1979 to 1989, 1990 to 2000, 2001 to 2013, and 2013 to 2017. Although knowledge of GCHQ had been a “public secret” in the UK since 1976 when its existence had been disclosed in a *Time Out* article by investigative journalist Duncan Campbell, the agency had not been acknowledged or mentioned in parliamentary debates until 1979, which was our starting boundary line. Indeed, until the 1980s, the UK’s security services were the “blackest of black boxes” (Neal 2019, 116), both not publicly acknowledged by the government and also not subject to institutional debate. Some of the other boundaries such as the end of the Cold War and 9/11 are generally accepted as indicative of security transformations in IR literature. The third boundary line is that of the 2013 Snowden disclosures on mass surveillance by the NSA in the US, GCHQ in the UK, and other intelligence agencies. This was particularly important for us as GCHQ featured prominently in the disclosures and is a key actor in global mass surveillance and security practices. More generally, the Snowden disclosures gave rise to intensified public debate, critique, and mobilization against mass surveillance (Bauman et al. 2014; Lyon 2014; Gros, de Goede, and İşleyen 2017; Kaufmann, Leander, and Thylstrup 2020; Aradau and Mc Cluskey 2022).

How can we mobilize data visualization to trace the contestation and critique of security? How does data visualization as a critical method in digital humanities speak to the concerns of CSS scholars? By visualizing parliamentary debates about GCHQ, we were interested in whether we could see critical vocabularies emerge across the different “epochs” or, conversely, whether we would encounter the same vocabularies of security, threat, risk, and protection that public discourses reproduce. Data visualization as a methodological device produces an orientation to contestation. Our interest in visualization was not to simplify but to complicate and disturb well-known discourses about security that focus on the developments of national threats, counterterrorism, protection, and prevention.

To this purpose, we do not focus on one visualization, but work with several visualizations to multiply and complicate the ways in which we can trace contestations of security. We started with an overview of the most frequent words across time. Word counts might seem simple at first sight, but they position research toward what is dominant (and can also reveal what is not) across time. They have the advantage that they can be easily calculated (if not visualized) and activate interpretations and reinterpretations across the different communities involved in the analysis of security practices. Each of the word count visualizations in this section orients us to different issues and recasts the trajectory of our collaborative research. The first visualization takes the most frequent nouns, arranged into three categories: organization, politics, and topic. Organization refers to procedures and how things are done, politics to public actors invoked in the debates, and topic to issues that are debated. The treemap in Figure 2 visualizes these words using nested boxes whose size represents the frequency of a term. The colors indicate three categories we used to classify the different terms. Words related to organizations and topics dominate parliamentary discussions of GCHQ.

Most of the words in Figure 2 are not surprising. Security and governmental questions rank high, as do words commonly related to security and danger—“national,” “foreign,” and “police.” However, words of contestation, if not critique, also surface—“debate” is to be expected, but “trade union” is more surprising for security and intelligence. The appear-

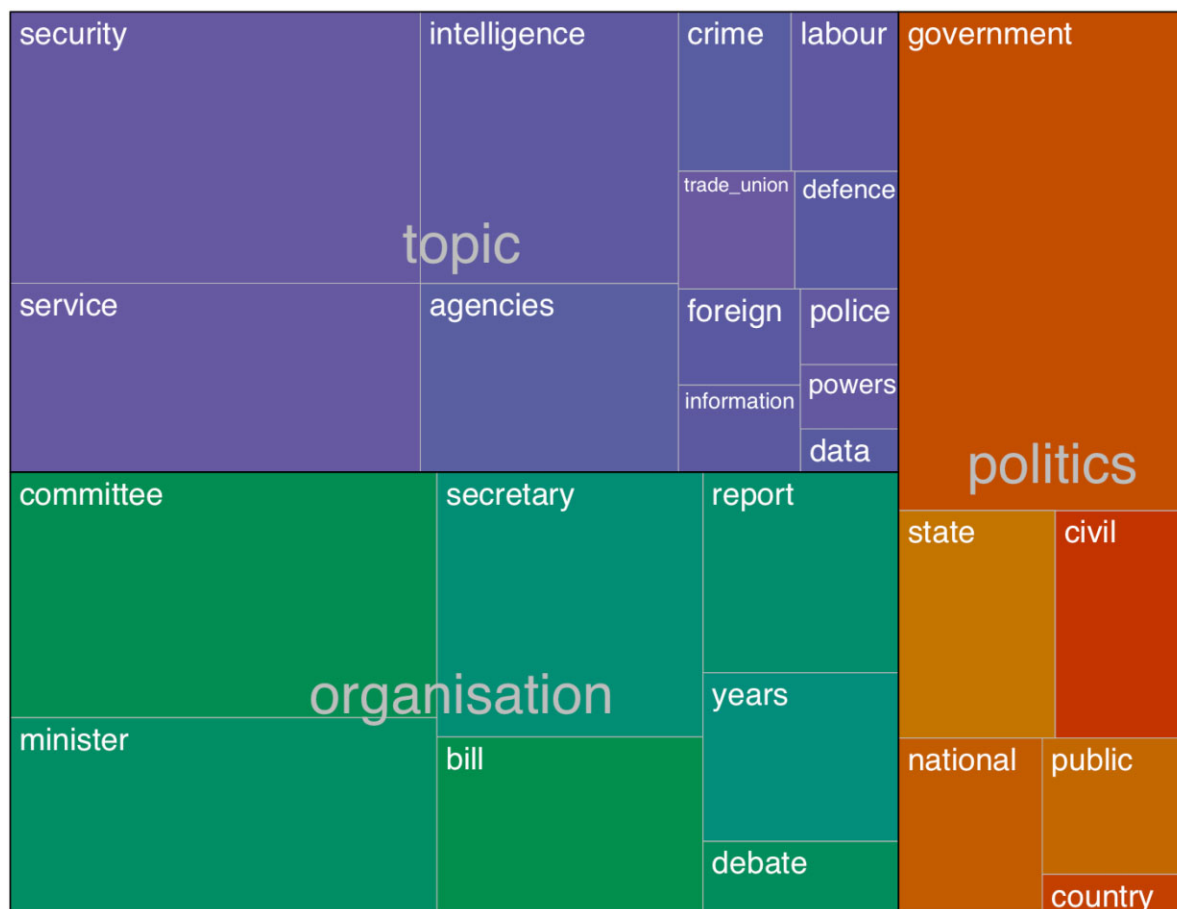


Figure 2. Treemap of most frequent words.

ance of the “public” also attracted our attention, as did the presence of “information” and “data.”

From this initial visualization, we wanted to trace the salience of “trade union,” particularly given its relevance across time. Therefore, we needed to go back to the archive to understand the trade union ban at GCHQ, the wider union mobilization against the Thatcher government in the 1980s, and repeated references to labor rights, union rights, and international bodies such as the International Labour Organization and the European Commission on Human Rights well beyond the 1980s. In 1984, Margaret Thatcher’s government banned GCHQ workers from joining a trade union citing reasons of “national security.” Considerable debate in the House of Commons ensued and several MPs framed the threat of de-unionization in terms of rights, emphasizing the scale of the ban, as the measures affected “the fundamental liberties of well over 5,000 of our citizens” (David Owen, 1984-01-25). Moreover, the ban had been decided “without any consultation with trade unions or with the Security Commission—the body which all sides of the House have trusted on matters dealing with the GCHQ and many other areas of national security” (David Owen, 1984-01-25). The trade union debate became part of wider critiques of the Thatcher government policies, as one Labour MP highlighted a few years later:

When visiting Poland, would it not be utterly hypocritical for the Prime Minister to force her company on Lech Walesa, who is fighting for free and independent trade unions in Poland, while she is trampling on

free and independent trade unions in Britain? (Gerald Kaufman, 1988-10-19).

While clearly visible in the word counts, discussions of trade unions and labor rights are largely absent from intelligence studies, although feminist CSS and IR scholars have argued for analytical attention to the racialized and gendered labor of security (e.g., Chisholm 2014; LeBaron 2015). In intelligence studies, the trade union dispute is seen mostly as incompetent management by the Thatcher government (Aldrich 2010) or an unfortunate historical aspect (Ferris 2021). On a different note, the trade union dispute, amongst other scandals, made “it difficult to sustain the fiction that the British intelligence and security agencies simply did not exist” (Bochel, Defty, and Kirkpatrick 2014, 46). The strike by GCHQ workers alerts us to the fact that security and intelligence organizations are not homogeneous. Worker organizations and whistle-blowers mobilize critiques of security practices, and they often do so not just nationally, but with the mediation and support of international actors. Contestations and critiques of security rely on drawing ‘transversal lines’ (Basaran et al. 2017).

In our research on organizations that feature in the debates about GCHQ, we could identify many labor-related organizations. In their amalgamation, they make up a significant amount of the organizations captured, but less so when considered separately. They range across international, national, and local entities, associations, and trade unions, and include examples like the International Labour Organization, the Trade Unions Congress, the Council of Civil Ser-

vice Unions, and the National Union of Mineworkers. Even a simple visualization that did not consider words in relation and therefore in context helped direct our analysis toward the critique of workers and labor organizations. It also highlighted the timeframe of contestation, where debate about GCHQ was not made possible through legislative changes but through strike action. This reinforces the significance of workers and trade union issues within debates on GCHQ, but also indicates their complicated and fragmented characteristics that a simple word frequency analysis may not grasp.

The visualization of most frequent words does not tell us, however, how these vocabularies of contestation and critique change over time. Do questions of labor rights and unions come back, particularly given the salience of “trade union” across the whole archival selection? To address this, we selected the four “epochs” discussed above. [Figure 3](#) shows a comparison of the four periods with all the most frequent words per period weighted by their average distribution within a period.

There are clear differences between these periods. The trade union debate is important before 1989 and continues to be mentioned into the 1990s, until Jack Straw’s speech in 1997 announcing the reversal of the trade union ban by the newly elected Labour government. The second period (1990–1999) begins to surface the language of parliamentary scrutiny and oversight—“report,” “(select) committee,” “member,” “bill,” etc. The period after 2001 continues the theme of scrutiny, but it has two new references to “foreign” and “information.” The “public” also starts to appear amongst the most often mentioned words, to which we return to later. “Security” now spans the continuum of security agencies, government, ministers, parliament, and public. In the final period, “data” and “cybersecurity” enter the debate, as does “police,” which could be indicative of an important transformation in security practices around GCHQ.

The rise and prominence of terms relating to parliamentary scrutiny, mainly “committee” and “report,” also instill a new sort of continuity, which is to be expected given the debates scheduled around the publication of reports by the newly established Intelligence and Security Committee (ISC) in 1994. However, these dwindle with the failure to provide and discuss reports in the last period. This is also highlighted by the ISC in their 2022 annual report, as they note the failure of UK Prime Ministers to have met with the ISC since 2014, despite annual meetings for two decades prior ([Intelligence and Security Committee of Parliament 2022](#), 8). While there is a more systematized and conventional oversight structure, there are significant changes to how oversight is discussed and who it is (not) relegated to. Of course, the existence of oversight bodies and nouns in the data do not automatically suggest critical engagement, as we discuss later.

While this visualization ([Figure 3](#)) indicates continuities, the difference pre- and post-the 1994 Intelligence Services Act is telling of how GCHQ is discussed, particularly when analyzed together with the text of the debates. A reading of the archive suggests a more open and critical engagement with the activities of GCHQ before the setting up of the ISC in 1994, and that the introduction of more openness did not necessarily translate into more oversight or transparency. In 1992, Labour MP Jane Kennedy questioned the government’s approach to oversight and openness before it was delegated to the close-knit circle of the ISC:

If the allegations in Sunday’s edition of *The Observer* are true concerning the GCHQ phone tap of the Lomrho organisation in 1989, under the instruction of the

former Prime Minister, Baroness Thatcher, does he accept that that merely underlines the scepticism that the Opposition feel about the sudden-found commitment to open government, as claimed by the Government? (Kennedy, 1992-06-30)

In 1994, a few months before the Intelligence Services Act was passed, while addressing allegations of GCHQ bugging domestic phones, another Labour MP questioned the government’s understanding and use of national security:

Another feature is that the security services have engaged in operations that are difficult to justify in terms of national security. I am talking about some of the arms contracts to Iraq, which have already been mentioned, and [...] the training of Khmer terrorists in Thailand by British soldiers. [...] We had no possible national security interest unless we owed a few favours to the Americans in return for what they did for us in the Falklands war, which they were calling in. (Chris Mullin, 1994-02-22)

These excerpts capture some of the critical interventions that questioned national security, situated intelligence in the violence it entails (and importantly the violence beyond UK borders), and questioned government approaches of “openness” and “transparency” that were supposedly embraced in the 1980s. The rise of the ISC and the consignment of oversight to its close-knit sphere, indicated in [Figure 3](#) through the appearance and prominence of words like “report” and contextualized through the parliamentary debates, mark a significant shift in how intelligence is discussed, and by whom. Thus, even as the limitations of parliamentary oversight can be explained through the fact that they “lack the necessary time, expertise or political will to act vigorously” ([Gill 2020](#), 977), it is important to note that most of the nouns in the visualization refer to the executive, parliamentary committee, and security services/intelligence agency. The “public” appears as a more sustained reference from the 2000s. Additionally, the public is only invoked as a passive subject in these debates, one whose concerns need to be “allayed,” whose confidence needs to be “gained” or “re-gained,” or as public opinion who needs to be “reassured” (e.g., [Ian Wrigglesworth, 1982-11-15](#)). These problematizations perdure across the four epochs, so that “public interest,” “public trust,” or lack thereof, are invoked repeatedly in parliamentary debates. For example, in the discussions of the Investigatory Powers Bill in 2016, the practices of “public authorities” are justified through the need to “keep the public safe” (2016-06-06 and 2016-07-19).

Perhaps most telling of the limitations of critical engagement in the contestation of security is the *absence* of expected words and organizations in a frequentist analysis of words and their relations. What we expect to see but is missing is based on prior investigations in the archives, GCHQ scandals that are ignored, and analyses of security. For instance, the monumental Snowden leaks only surface a handful of times in the archive in brief ways and little at the time of the actual leaks. Of course, Snowden’s revelations featured GCHQ’s role significantly and its global repercussions.

There are also clear continuities across these periods. “Government” remains important throughout. “Service”—standing for the security and intelligence services—is another term that appears in all periods but has particular importance in the second. “Security” is a term that is eclipsed in importance in the first period by “safety,” which does not appear again later. From the second period onwards, “secu-

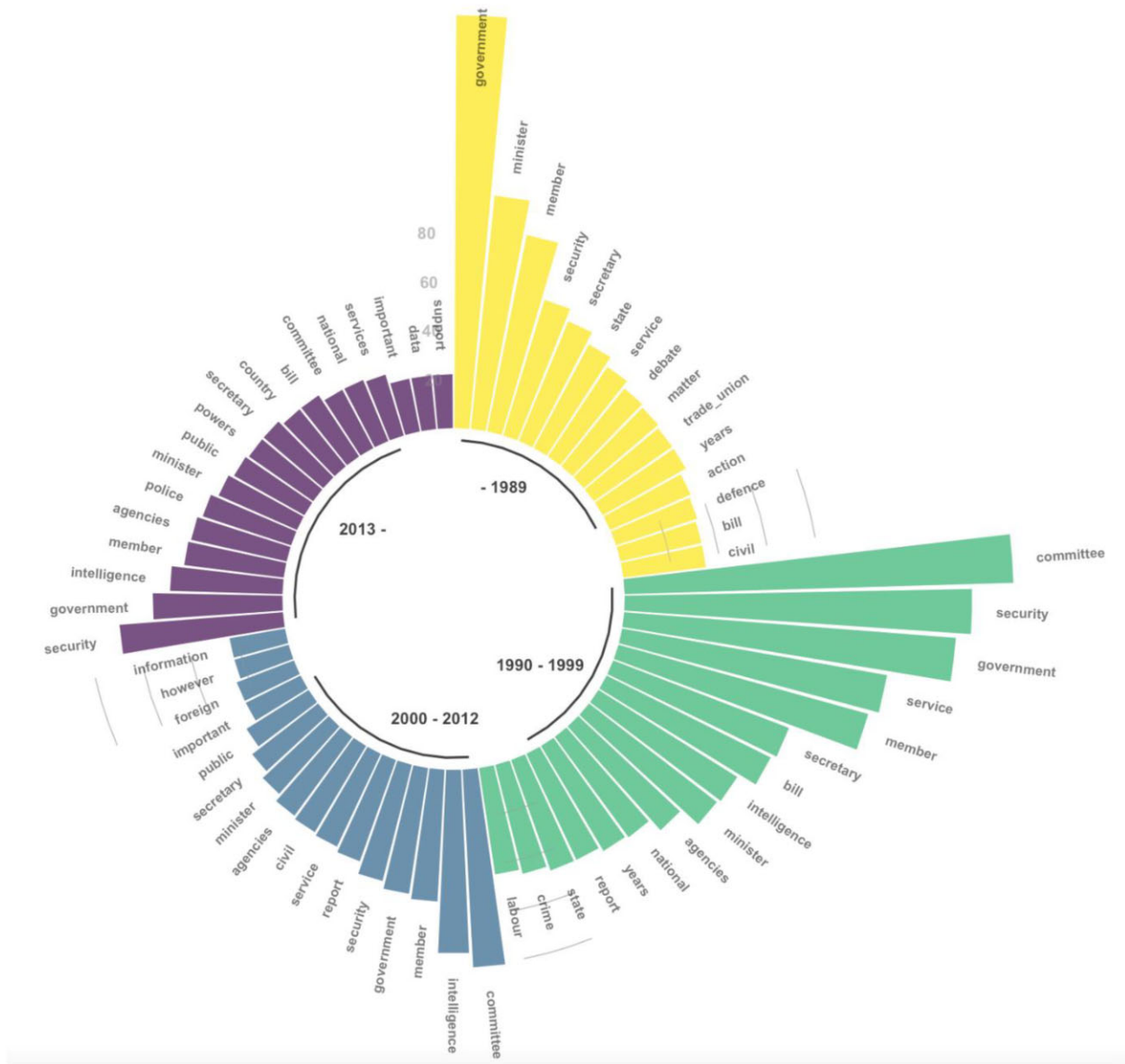


Figure 3. Most frequent words across four time periods.

urity” is among the top five terms becoming the most important one in the last. “Intelligence” also plays a strong role in these periods. Again, attention to absence and what is not captured raises the question of non-state actors (however connected to the state they may be), particularly the role of corporations. This is most surprising around legislation concerning mass surveillance, where private corporations have become indispensable to data collection and processing. At the same time, the fragmentation of these actors could also mean that they do not surface in our visualization, as we had to set limits on the number of words, actors, and contexts that could be included so that the visualization remains legible.

Even with more openness and oversight that were supposed to follow the introduction of the ISC, the debates see a significant shift away from explicitly speaking about GCHQ to speaking about national security in broader terms, particularly with regard to the “foreign threat.” It should be noted, however, that these logics surface throughout. An intervention in 1994 encapsulates these continuing and racial-

ized logics adopted over time and particularly embraced in debates in the last two periods:

We think that terrorism, say, in Egypt, Algeria or the Maghreb in general or the operations mounted and orchestrated out of Khartoum are remote to us. People say, “What is the threat to us?” The answer is that if such things get out of control they can be a threat to the stability of Europe, including northern Europe. There are great dangers which we need to know about well in advance. (David Howell, 1994-02-22)

By visualizing frequent words in the parliamentary archive, we have shown how visualizations can orient us to different dimensions of security contestation and critique. The presence of a “trade union” has led us to an analysis of the transversal dimensions of critique through national and international labor organizations and workers’ organizing. These visualizations have also oriented us to the limits of “oversight,” the invocation of passive “publics” and “public trust,” and the rise in and use of words such as

“foreign” and “report.” Moreover, the absence of expected words and organizations is indicative of the limits of critique within these contestations of security. More importantly, different visualizations point to various dimensions of contestation and its details. Rather than offering a narrative of the transformation of security since the 1980s, visualizations can be best understood as methodological devices that orient us to details about how security becomes contested, how it is justified, and how critical voices are heard or, conversely, are rendered silent or passive. These visualizations are partial and unfinished. Building on critical engagements with the relation between security and freedom in CSS, we discuss another type of visualization, which allows us to connect “security” to other vocabularies and related issues.

Making as Critiquing: Data Visualization as Critique of Security

In engaging with the parliamentary archive, we have worked with multiple visualizations of how contestations of security appear through keywords that (more or less) change over time. But such keywords remain isolated and do not indicate the context in which security and intelligence issues appear and how these silence, eschew, or displace other political issues. What other vocabularies does the language of security connect to and disconnect from? Our third specification of “making as critiquing” engages critique in two ways: on the one hand, critique as an embodied practice that social actors mobilize in everyday life (Austin, Bellanova, and Kaufmann 2019), and on the other, critique as multiple practices, with uneven distribution of visibility and invisibility, presence and absence. Inspired by feminist work, we situate practices of critique within asymmetries of power, which we aim to examine and challenge. We return to the question of critique in the conclusion.

By visualizing words in relation, we can discern the ways in which social actors engage in contestation and critique. Relationality in texts is part of language modeling that retrieves word contexts from existing words. In recent years, these language models have inspired new research in the digital humanities community given their capacity to infer meaning from words through the relations these have with other words (Blanke and Wilson 2017). Language models compute a distributed representation of words in the context of all other words in the corpus. The Word2Vec language model (Mikolov et al. 2013) makes it possible to understand the context in which particular words appear. For Word2Vec, all words in the archive are given a unique vector in a high-dimensional space. Words that share relations are close vectors in this space indicating similarities. Representing words through a numerical encoding of their context words quantifies their semantics and allows us to discern the concepts associated with a particular term.

In relatively small corpora, Word2Vec can cover low-frequency words, thus shifting analytical attention from what is dominant in a particular “epoch” or across the corpus. The original algorithm also expresses two frequently co-occurring words as so-called bigram phrases like “interests_national.” For example, for the second period from 1990 to 1999, running Word2Vec delivers a vocabulary of 61,802 distinct unigrams and bigrams, with over 500,000 words in total. We used the skip-gram version of Word2Vec, targeting the most likely words related to a keyword like “security.” “Security” will have a similar word vector to words in

similar contexts. In the end, for each period, we have certain words that co-appear frequently in the context of security. Computationally, these words either follow on from its mention or precede it.

In the first period, for instance, “industrial_disruption” is the fifth most similar bigram to “security.” This idea disappears later, as labor relations at GCHQ are less discussed. As seen in the previous section, much of the discussion in the 1990s centered around the institutionalization of parliamentary oversight processes. During this period, Parliament starts to formally engage with debates about security and intelligence, and the word relations show this clearly. MPs express concern about security being “compromised” and national threats (which appear as the bigram “threat_national”). Here, security through GCHQ requires “delicate” procedures and “interfaces.” From 2000 to 2012, terrorism (as the bigram “threat_terrorism”) manifests itself as most like security. Furthermore, arguments are put forward that national protection (“protection_national”) needs to be strengthened and stability ensured. In the final period from 2013, security becomes a global relation as rendered by the bigram “around_world,” focussed on working “together” with “allies” on questions like “aviation.” Cybersecurity (“national_cyber”) is also very visible in parliamentary debates during this period.

Situating “security” in word relations makes it possible to analyze key controversies in the GCHQ debates that are relevant to CSS and IR. None is perhaps more present in public and scholarly discourse than the relation between “freedom” and “security.” To understand how “freedom” and “security” are related and how these relations change over time, we expanded the single-word contexts and relations in Word2Vec to these two words. In the final period, for instance, “values” are related to both “security” and “freedom,” but so is “destroy way.” By related, we mean that they appear in the contexts of these words and are therefore similar. In the following visualizations, this is expressed by measuring the distance between their word vectors. Unsurprisingly, words related to “security” and not related to “freedom” are those referring to the security services, agencies, and their work.

Our next visualizations aimed to understand how word relations change over the four periods. We could only do this for those words that are likely to appear in all periods, which is why we focused on the most common words. The advantage of this selection is that absences surface in a different way than shown in the previous section—what is absent in some periods also becomes visible. The disadvantage is that these words might not be the most related ones overall and thus show only small similarity values. As with previous visualizations, the words oriented us to problematizations of security and freedom, which also required us to go back to the archive.

As we lacked examples from the digital humanities literature, we developed alternative visualizations of the temporal development of word relations around both “security” and “freedom.” To include these temporal relations, we created two plots in Figures 4 and 5, which feature the most related words over the four periods. Given these two relations (“security” and “freedom”), each word graph uses them to define the two axes of a visualization. The *x*-axis represents the similarity between the word in focus and “security,” whereas the *y*-axis shows the similarity with “freedom,” measured as the distance between word vectors in the vector space. The closer we get to 1, the more similar the words are. Figure 4 shows those words related to “security” and “freedom” that are present in all four periods (color-coded), while Figure

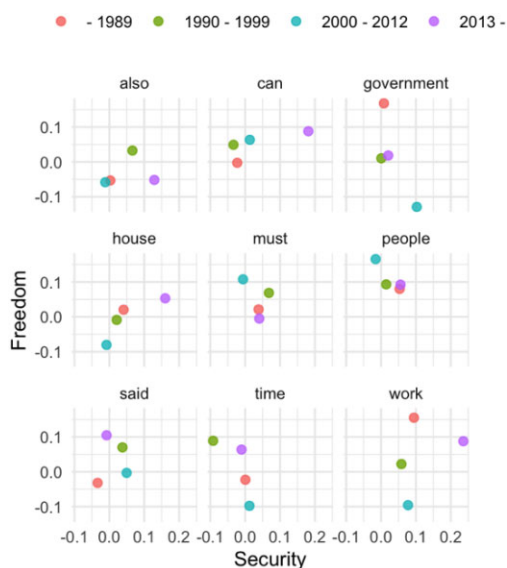


Figure 4. Words related to security and freedom.

5 does the same for words appearing only prominently in three periods. The changes in the position of the dots represent differences in the relations across the periods. “Must,” for instance, appears to be similarly related to “security” and “freedom” across all four periods, as the dots in Figure 4 are close to each other with no outliers.

Across all four periods in Figure 4, we find the language used in demands for oversight—“government,” “time,” and “can.” “Time” stands out as opposed to “security” only in the 1990s, when new oversight institutions and processes were established. This means that “time” points in the opposite direction according to Word2Vec. The word “can” indicates where a shift occurs across the epochs towards what “can” be done, for example: “we can prevent...,” “we can work together to defeat...” Looking it up in speeches, we see phrases such as “we can control the information,” “we can get court records,” and “we can use intercepts.” However, it is also worth noting that “can” is a common indicator of questioning (and answering) in Parliament, for example, “Can the minister explain...,” “Can the Foreign Secretary say...,” “I can assure,” “I can tell you,” “I can announce.” And while there is genuine questioning amongst these examples, particularly in relation to the powers put forward by the Investigatory Powers Act, or the role of the ISC, it is worth noting that many uses of “can” in questioning have been used to assert and affirm security discourses, particularly questions asking for confirmation of an opinion or statement. In surfacing connective words such as modal verbs, these visualizations raise questions about the modalities in which contestation and (the absence of) critique are articulated. The presence of “must” would suggest that necessity is not exceptionally characteristic of security, but also of its contestation through freedom.

Figure 5 makes use of our most frequent word strategy to visualize absences, as it shows the words missing from one specific period and only present in three epochs (not all four). As we have already seen, the first period is shaped by the struggles around labor rights at GCHQ. Words otherwise common in discussions on oversight like “agencies” or “important” are not present during this period. These word relations all appear in the second period from the 1990s, which demonstrates the significance of this period for the parliamentary discourse about GCHQ.

According to Figure 5, the third period in the 2000s does not relate “right” either to security or freedom. “Right” disappears when GCHQ plays a key role in the “global war on terror.” “Right” is also the word for which relations have changed most, together with “made,” as the dots are relatively spread out. For the final period, “know,” “way,” “made,” “may,” etc. are absent. The absence of “way” is interesting as it appears frequently in the debates but its relation to security and freedom gets weaker. Over a fifth of the entries containing “way” from 2013 are directly from phrases about “way of life,” invoked in conversations around terrorism such as “we will defeat those who seek to attack our way of life” or “no amount of terrorists will ever destroy our way of life.” In similar contexts, “way” is referred to as a strategy or justification for “security” approaches: “the best way to defeat terrorism” or “The best way to defeat the terrorists is through intelligence.” The invocation of “way” as in “way of life” sheds light on why its relations to “freedom” and “security” get weaker after the focus on terrorism in the third period. “May” is the third modal that is added to “must” and “can” from Figure 4, but it also disappears after 2013. “One” occupies an ambiguous position, as it is used both in the impersonal, authoritative way of “one knows...” and in specifying an individualized concern, as in “one of...” Visualizing these absences raises new questions about what changes in how “security” is contested and particularly how these contestations might not oppose “freedom” and “security” but connect them.

To explore the relations between “security” and “freedom” further, we introduce a third type of visualization, which enables tracing differences between keywords across time. Figure 6 displays 15 relations to “freedom” and “security,” with the greatest numerical difference/distance between them illustrated via the length of the dumbbells of the graph. This visualization also shows the orientation of the relation as the direction of the dumbbell in each row (from green for freedom to red for security and vice versa). Time periods are encoded in the color of the dumbbell. “Report” has the strongest numerical difference in the third period, where it is in an opposing relation to freedom. “Right” has the strongest relation to freedom in the first period. Its relation to “freedom” and “security” is almost the direct opposite of the one “report” has. “Government,” “agencies,” “country,” and “committee” are all similar in direction to “report,” suggesting that oversight and institutionalization support security and security agencies rather than freedom. Overall, most relations are in opposing directions to “freedom,” while related to “security.” “Time” and “people” are outliers, with “time” especially opposed to “security.” The emergence of “people” is particularly interesting given the invocations of the “public” we discussed earlier. Whether “people” are an active or a passive subject would make a difference between the position in relation to security or freedom.

All the visualizations we have worked through so far appear as static images, which render words and their relations through different text-number-graph representations. To multiply word relations that could not fit in a graph, we also worked with an interactive app, which allows users to reconfigure relations between key concepts in the archive and can involve more people in the exploration of relations between freedom and security. Along three axes, one can visualize, for instance, relations between “government” and “right,” “security,” and “intelligence,” zooming in and out of various epochs. Figure 7 is a screenshot of the app where we explored “security_service” in the second and third periods and its standout relation with “people,” “gov-

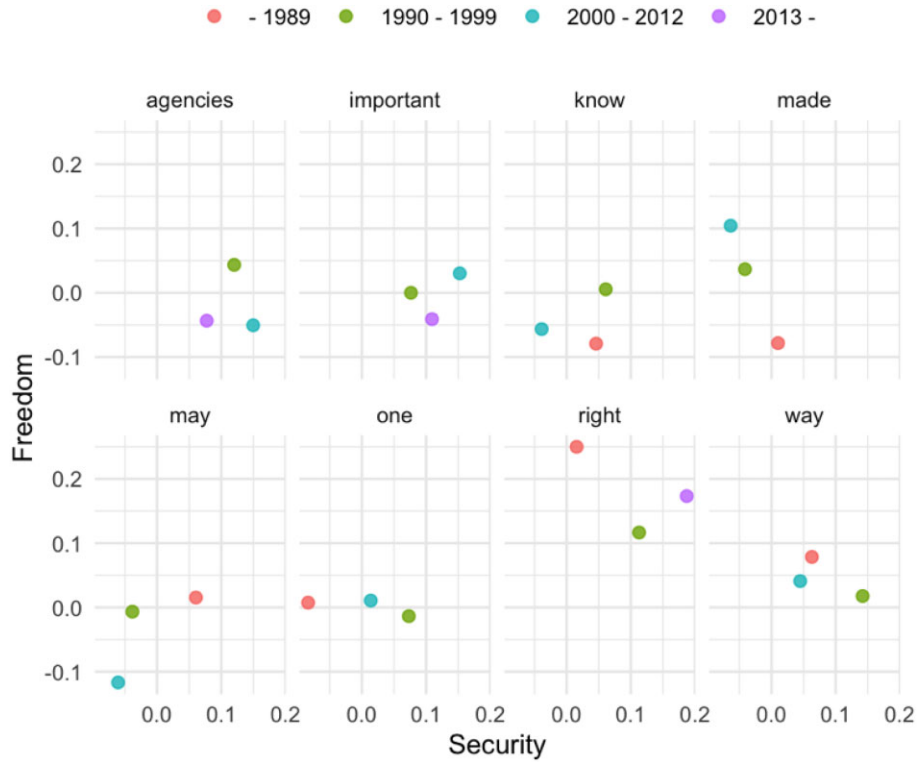


Figure 5. Words related to security and freedom.

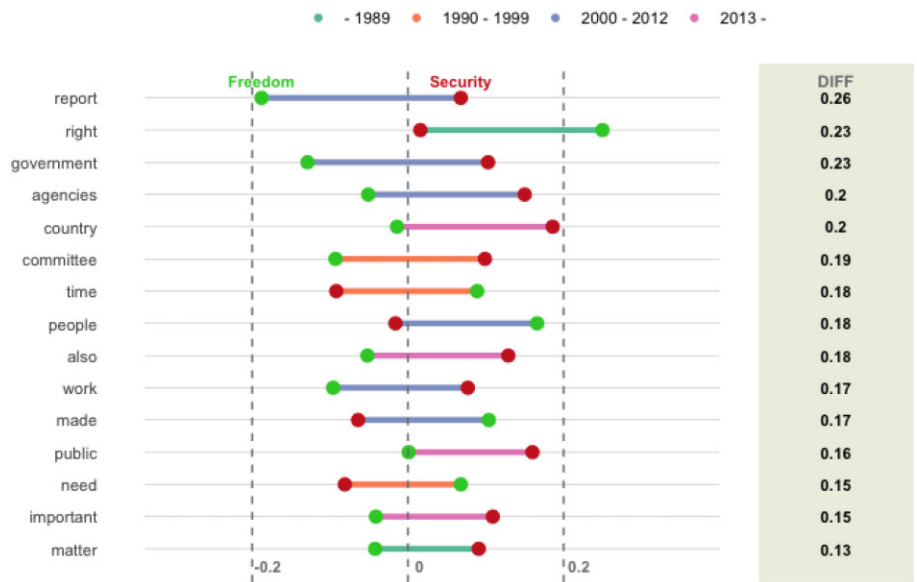


Figure 6. Relations between freedom and security.

ernment,” and “police.” Notably, and resonating with the surfacing of “people” in Figure 6, we can see that security services appear strongly related to “police” and opposed to “people.”

Making these various visualizations has brought to life critiques and social actors who are often ignored in the critical literature on security and intelligence. It has also drawn attention to new questions and problematizations that emerge from small details and words such as “public” or “people,” “must” or “can.” At the same time, it is important to also look at what the data and data visual-

ization *cannot* do (D’Ignazio and Klein 2020, 10). Focusing on what surfaces in these debates, what provokes passion and debate, and what is connected to security also raises questions about what did *not* cause a stir, anger, or debate. Our visualizations cannot offer good answers to all the absences, what is not there, or what is too radical or unacceptable to enter parliamentary discussion. Even as we can trace the emergence and evanescence of certain words, what is not present in our visualizations is not necessarily absent from the whole history of parliamentary debates.

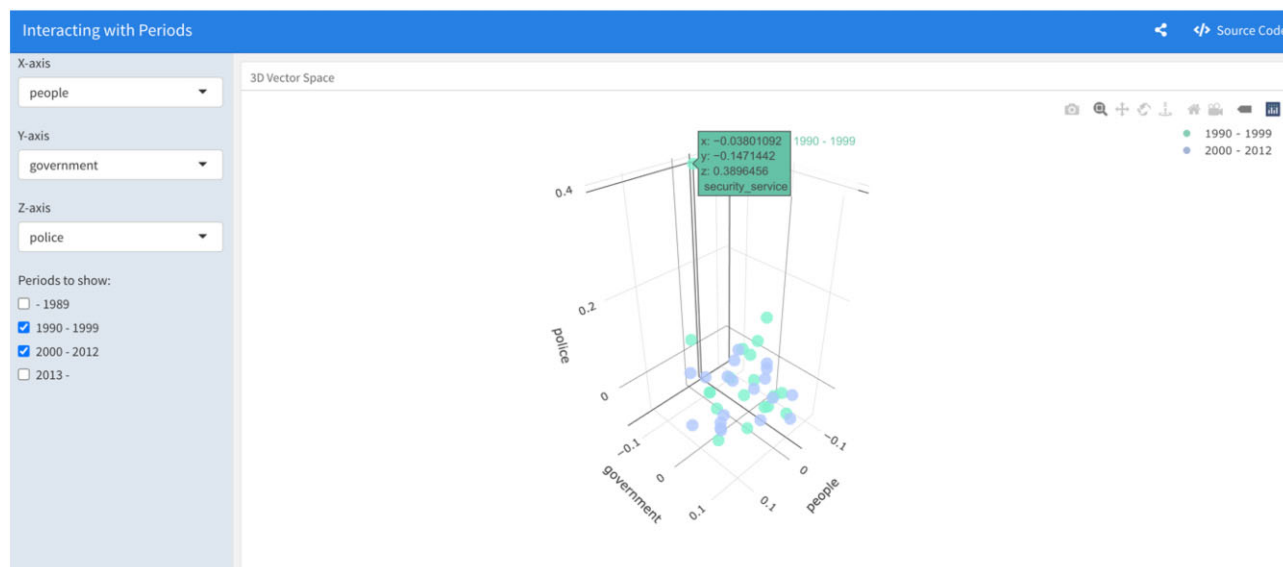


Figure 7. Screenshot of the app.

However, our visualizations also provoked questions about what has not become a matter of dispute, such as the many effects of security and intelligence actors beyond the UK's borders and on non-citizens, even though this is exactly where GCHQ has been accused of abusing its powers most. By visualizing these debates across time, we have tried to contribute to examining practices of contesting security through manifold critiques mobilized by social actors. These visualizations are openings with the aim to destabilize taken-for-granted assumptions about security and its critiques and offer perspectives and methods for those resisting the violence of security.

In response to feminist calls to expose *and* challenge power, we also need to reflect on the limits of critique through making data visualizations. As acknowledged previously, our engagement and making processes engaged with debates within a non-radical site of critique. While security practices and the actions of the secret services became the subject of parliamentary debate, we did not build a “counter-archive” but visualized contestation within an existing one. At the same time, our visualizations oriented us to critiques that were more disruptive of power relations. The centrality of the trade union ban in parliamentary debates exemplifies the potential of different critiques of power relations, which draw transversal lines between international and domestic actors and concerns. In his detailed analysis of the trade union ban, intelligence studies scholar [Richard Aldrich \(2010\)](#) concludes that “on balance,” it was justified. For us, however, the trade union ban made possible different contestations and critiques which both endured and re-emerged over time.

The fact these debates about GCHQ happened in Parliament since the 1980s does matter. Exposure and pressure within parliamentary debate lent itself to debate and direct action outside and vice versa, through a dynamic that contributed to and sustained the contestation and critique of security. “The only watchdog,” argued a former GCHQ employee, “was the workforce” (quoted in [Norton-Taylor 2020](#), 281). While his view is not exactly reflected in the parliamentary debates, it is indicative of critical possibilities available alongside and beyond parliament. Visibility and critiques in

one site can resonate with and sustain more radical critiques in other spaces.

Understanding “critique as a practice” ([Austin, Bellanova, and Kaufmann 2019](#), 5), as CSS scholarship has suggested, means that our making processes have been oriented to sites of contestation, where varied critiques (and justifications) contend for visibility and credibility. Within the limited space of this paper, we could only trace some of these critiques, which vary in style, rhetoric, and disruptive aims.

Conclusion: Making and Unmaking

This article has developed data visualization as a methodological device for CSS and critical IR. Building on feminist scholarship in digital humanities, we have shown how making data visualizations can orient research toward contestations of security. Data visualizations are both qualitative and quantitative, both text and image, both word and number. In that sense, data visualizations are different from image-making, as they disrupt methodological assumptions of what it means to produce visuals.

Data visualizations are interpretative, unstable, and unfinished. They are always open to modification. The visualizations we have selected are a snapshot of the many we have made and remade over time. We envisaged them as exploratory orientations, as they allowed us to ask questions anew, or provoked new questions about the contestation of security. While each of them can offer some provisional insights, it is the juxtaposition of multiple visualizations that highlights ambiguities and absences. In making these visualizations, we have downplayed their aesthetic elements. This was partly due to their instability, as we had made so many through the process of “cleaning” and standardizing the data, and partly due to our interest in exploring the UK parliamentary archive with an orientation to the contestation of security. It was only in response to a question by a colleague that we decided to add color to these visualizations, which initially used greyscale in order to add more legibility to the differences we were looking for.

While our main intervention focused on the making of data visualizations, methods are entangled with empirics, concepts, ontology, epistemology, techniques, and theories (Aradau and Huysmans 2014). Through data visualizations, we also interrogated aspects of intelligence studies. Paradoxically, our data visualizations suggest that there was more contestation and critique of security, and more connections were made with other social struggles in the 1980s, before the institutionalization of oversight and introduction of reporting mechanisms in Parliament. Our analysis, however, does not include the archives of select committees (see Neal 2019), so therefore needs to be taken as provisional, as an orientation that problematizes relations between publicity and critique. By attending to what is small, appears insignificant, or is absent, data visualizations problematize epochal analyses of change in security and intelligence studies.

Finally, we have proposed to specify “making” through working, orienting, and critiquing. In this threefold form, making data visualizations is oriented by questions about the contestation of security practices and is positioning research by provoking new questions. It is also an unfinished process. We therefore wish for data visualizations to offer useful insights and openings for those engaging with security practices, within, and outside disciplinary boundaries, for example, campaigners, researchers, academics, NGOs, and advocacy groups. We envisage them as a means of encouraging collaborative making that embraces the potential and limitations of data visualization as methodological device.

Some insights from the making processes described above could open questions about what raises attention, how critiques around security have been shut down previously, the trajectories of security discourses, and which contestations, sites, and entities provide openings for different kinds of critique. Crucially, through our embrace of feminist approaches and digital humanities methods, we acknowledge the power and (after)lives of these data visualizations. Making data visualizations can also provide opportunities for co-option and appropriation by the very actors these making practices have sought to expose and critique.

In responding to the special issue call to engage with “material-aesthetic forms of knowledge and practice,” we wanted to speak to the dynamics of making and unmaking that critique as a practice entails. For us, making data visualizations is simultaneously a process of unmaking boundaries and contesting security. Unmaking has been particularly significant to CSS, but it is also a practice of critique that we could trace across social spheres, from parliamentary contestation to investigative journalism, labor organizations, and activists. Our approach to the theme of the special issue highlights both the need to specify making and to simultaneously attend to practices of unmaking power, violence, and insecurity.

These unfinished making processes also pose ethical challenges, which we have not addressed here and which remain open questions for research engaging with data visualization as a critical method. While acknowledging the problems of siloed, slick, fast, and sleek data visualizations, how do we also attend to questions of accessibility and “making public” (Austin and Leander 2021) while seeking to complicate, deepen, and destabilize through our making processes? How can we also ensure that the continuing and collaborative making of visualizations extends beyond journal papers, academic circles, and institutional walls?

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