Sourcing practices of online news media in Switzerland during the war in Ukraine

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Introduction: In times of war, sourcing becomes a major challenge for journalists. Information is often unavailable because access is restricted or because reporting on the ground is prohibited, too dangerous, or even simply too costly for media having to work with limited resources. Which sources actually shape the news is a highly relevant question because news media still constitute the main channel of information for many citizens, especially when it comes to wars abroad. For a long time, scholars have diagnosed a dominance of official sources in war coverage but have not analyzed whether this is still the case with the advent of social media platforms, which potentially offer journalists other sources. Moreover, the integration of social media sources, such as Twitter or Telegram, is just one of many interdependencies in hybrid media environments. We aim to provide a more holistic understanding of sourcing practices in times of war by analyzing to what extent information from government and military sources, social media, other news media, and news agencies is featured as a main source in reporting on the war in Ukraine.

Methods: In our paper, we examine how 13 online media in Switzerland cover the war in Ukraine during the first 3 months after Russia's invasion—an example of a period in which journalists must typically identify reliable sources for reporting on the events surrounding such a war. Using a manual content analysis of 1,198 news articles, we analyze the sourcing practices that are visible in the reporting.

Results: Our results clearly show that information from other news outlets and social media and, above all, from news agencies plays an important role. Structural features of media types lead to distinct sourcing practices. Heavily commercialized, advertising-based media rely on news agency reports, other news media, and social media much more than subscription media or public service media. However, in all media types, actors from the government and the military are the most important source type.

Discussion: Our study reveals patterns old and new in terms of sourcing practices war coverage in a European country not participating in, but affected by, the major war in Ukraine.

KEYWORDS

war coverage, sources of news, content analysis, news coverage, Switzerland, Ukraine

1. Introduction

Wars in the modern world are also mediated wars—especially for people in countries far away from the actual battlefields (Fröhlich, 2019). In a high-choice environment, one can find information on wars through a multitude of channels. However, trusted legacy news media based on both analog and digital channels still constitute a major avenue in many countries, if not the most important access point for citizens looking to find information, especially in times of fundamental changes and threats (Altay et al., 2022; Newman et al., 2022). For European countries, the invasion of Russian troops into Ukraine on February 24, 2022, a profound

escalation of a decade-long (violent) conflict, clearly constitutes such a change and threat. With the obvious social relevance and the rising audience interest in news about the war in Ukraine, journalists are faced with a number of challenges. As in any war, sourcing becomes a major problem for journalists (Jungblut, 2023). Information is often unavailable because access is restricted or because reporting on the ground is prohibited or too dangerous. Finding reliable sources on-site, for instance, a foreign correspondent with expertise on the conflict region, can also be too costly for media having to work with limited resources. This is especially true for the initial phase of a conflict, which is characterized by high uncertainties surrounding the events of a war (Burchell, 2020). During such periods, journalists often must at first identify and establish reliable sources to include in their reporting on the events. Sourcing practices during a period of war or violent conflict therefore depend not only on the actual availability of information provided by sources but also on the structural contexts at the meso level of media organizations and their respective media types.

At the same time, the war in Ukraine is the first war in Europe since digital media have emerged as important channels of communication. With the rise of digital media, hopes have been raised that social media platforms allow easier, cheaper, broader, and unrestricted access to information and, in principle, from a large variety of sources. However, whether social media platforms allow the dismantling of the typical dominance of government officials and the military in the news is an open question. This is because official sources still have better access to information than ordinary citizens, and they also engage in informational management, and possibly even propaganda, on social media platforms (Hoskins and O'Loughlin, 2015; Fröhlich and Jungblut, 2019). Moreover, social media platforms as such do not necessarily offer more reliable sources, as the ongoing debate about disinformation attests (Bimber and Gil de Zúñiga, 2020). It is also doubtful whether journalists' monitoring of social media from afar can actually serve as a substitute for continuously working with journalists on the ground who have actual expertise (Høiby and Ottosen, 2019).

Against this backdrop, the aims of this study are two-fold. First, we shed light on the relationship between news media and their sources through an analysis of the representation of these sources in news coverage of the war in Ukraine. Using the case of Switzerland, a country not directly participating in but affected by the war, we check to what extent political and military sources; sources from the media sector, such as news agencies and news from competitors; and, finally, social media sources are used by journalists in their reporting. Second, we try to explain patterns of sourcing by analyzing different media types with specific features and comparing subscription-based, commercial, and public service online media. Based on a manual content analysis of 1,198 news articles published in the first 3 months after the invasion in February 2022, our study analyzes the sources that 13 online news media from Switzerland use when covering the war in Ukraine.

2. Materials and methods

2.1. Background: Sourcing the news in periods of war

Sources and journalists engage in complex relationships, ranging from more cooperative to more conflictual arrangements (Mellado

et al., 2021). News is produced "through a series of interactions between news organizations and their socio-cultural environments"; thus, news content is a product of not only what journalists consider newsworthy but also what information sources make available (Tiffen et al., 2014, p. 374–375). Which sources shape the news has also emerged as one of the most important questions in research on war reporting and addresses not one but two of the main strands of research on news coverage of wars (Jungblut, 2023): (1) media dependence on or media independence from political influences and (2) how media cover violent conflicts. Thus, the visible use of sources in news coverage reflects not only how wars are depicted and conveyed to audiences according to the logics of the media but also how external sources affect journalistic news production.

As this transactional model of news production during wars makes clear, different actors compete for access to the news media and aim to shape news coverage of conflicts in pursuit of their own objectives; news media transform actors' input into news coverage according to their professional roles and other structural constraints and features (Baden and Meyer, 2019, p. 26). From a normative and empirical perspective, two main types of sources in war coverage are especially noteworthy: political and military actors, on the one hand, and media actors, on the other. In view of the generally complex and contested relationship between media and politics, especially during wars, political actors (especially from the government) and military actors are not only dominant "information subsidies" but also, given their large control of war-related sensitive information, potential censors and thus adversaries for news media. In this light, media sources (i.e., actors and organizations from the journalistic field) can become increasingly relevant in journalistic news production since they can better guarantee the independent provision of news, offer an already "journalism-adequate version of a story," and are available and accessible at low costs (Reinemann, 2004, p. 860). This type of (potential) independent and (pre-)produced information can stem from news agencies, other news media, and–to a certain degree–social media.

2.1.1. Source types in war reporting

The role of political and military actors is at the forefront of the debate regarding to what extent media are independent from external influences. It is mainly these actors who "constrain journalists' ability to produce coverage in many ways (e.g., by regulating access to sources and locations, imposing sanctions and censorship upon media)" (Baden and Tenenboim-Weinblatt, 2019, p. 54), invest considerable resources in news management (Esser, 2009), and, at times, even conduct propaganda and use disinformation (Freelon and Wells, 2020). Many studies have focused on whether media merely act as mouthpieces of the government or whether they challenge political elites. One of the main theoretical lenses is the "indexing hypothesis," which specifies that media reflect the opinions of political elites (including the opposition) and, hence, only challenge the government when there is internal elite division (Bennett et al., 2006; Dimitrova and Strömbäck, 2008). While this research has focused more on domestic news coverage (i.e., the relationship of news media with the politics of their own country), scholars have also pointed out the important role of political and military actors in media in countries not directly affected by a war. For media covering wars abroad, political and military actors are important because these actors are capable of restricting the media's access to information or censoring certain media activities (Brüggemann and Wessler, 2009). Political

and military sources become even more crucial when journalists have no (or only a few) chances to cover wars on the ground and find other sources, as reporting on-site can be too physically dangerous or even prohibited (Høiby and Ottosen, 2019; Christensen and Khalil, 2021). Still, there is surprisingly little empirical research on the actual visibility or use of political and military sources in media content—possibly also because most research focuses on topics, frames, or narratives of strategic actors rather than the actual visibility of these sources in war coverage (e.g., Iyengar and Simon, 1993; Fröhlich et al., 2007; Fröhlich and Jungblut, 2019; Gackowski and Brylska, 2022).

Faced with physical challenges and with external pressure from political and military sources and in order to uphold media autonomy, news media can either make these difficulties and pressures and the respective news management efforts transparent in "metacoverage" (Esser, 2009), or they can try to find ways to rely on other sources. One crucial way of doing this is using sources that are (potentially) both independent of political and military sources and that are providers of credible, verifiable (even better: already verified) and ready-made information (Reinemann, 2004). Two types of sources that fulfill both criteria are news agencies and other news media. Thus, by using news agency material or material provided by or published by another news media, news outlets can increase the certainty that information from these sources has been produced according to professional, journalistic standards. News agency material and reports by other news media, especially those with a good track record, can serve as reliable, fast, accessible, and relatively cheap providers with regard to the flow of news. However, using these sources has disadvantages too. First, even news agencies and other news media reports might have to rely on political and military sources. Second, since news agency material and content from other news media (e.g., free content from large media organizations) are usually widely available, using these sources means that an outlet's news coverage might not differ much from that of its competitors. This can be a problem, especially for those outlets wanting to be seen as distinct and as offering valuable and exclusive information for their audiences.

Strikingly, the role of these two source types in war coverage has seldom been studied. First, the importance of "routine reliance" on other media has mainly been analyzed using surveys of journalists but not with analyses of the actual content (Reinemann, 2004). Second, some content analyses include news agencies but rarely pay attention to other news media as sources. Third, content analyses tend to focus on broad issues, not specifying whether patterns also hold during periods of war. In this light, research on international news flows, including but not focusing on wars, has, for a long time, shown the importance of news agencies in the provision of foreign news (Wu, 2000; Wolfsfeld, 2011; Rantanen, 2020). Since many news outlets are primarily nationally or regionally oriented, it is not surprising to find foreign news coverage being dominated by (international) news agencies, which have wide networks of correspondents (Segev, 2019). From a purely economic perspective, relying on news agencies thus makes more sense for many news organizations than covering events abroad either from afar with their own staff or by employing wide networks of foreign news correspondents. As professional gatekeepers, news agencies as "silent partners" (Johnston and Forde, 2011) offer news publishers "a relatively cheap, reliable, and fast supply of information" (Welbers et al., 2018, p. 315). Indications exist that this reliance on news agencies has only further increased

in the digital age and is especially marked in online news media. In the Netherlands, Boumans et al. (2018) found that 68% of all online news relied on news agency material, a figure higher than in printed media, which identifies news agencies as the "central hub" in the provision of digital news in particular. In a study focusing on the Dutch news agency ANP but only in terms of political news coverage, Welbers et al. (2018) came to similar conclusions. They emphasized that higher news agency reliance online also went hand in hand with a high-speed online news cycle, as outlets tended to publish these articles less than an hour after the agency publication. However, some scholars have observed a trend in the opposite direction (i.e., news media relying increasingly *less* on news agencies; Cazzamatta, 2020). This is because digital technology has made it easier for news outlets to use sources other than news agencies by monitoring other websites and social media or using Web crawlers (Welbers et al., 2018). Still, the exact role of news agencies, specifically in war reporting in the current digital age, is unclear and an understudied phenomenon. For instance, a recent comparative study on the news coverage of the violent conflict between Russia and Ukraine since 2014 claims in a footnote that its intention was to study "authorship" (e.g., agency copy), but, because countries differ in making authorship transparent, such an analysis was not feasible (Fengler et al., 2020). Rather in passing, Baden and Tenenboim-Weinblatt (2017), for example, consider the increasing use of news agency material as a factor for increasing the similarity of news on the (violent) conflict in the Middle East across media from different countries, thus pointing out the importance of news agencies in media coverage. A comparative study by Burchell (2020) focuses on news agencies themselves (i.e., how the international news agencies AFP, Reuters, and ITAR-TASS cover different conflicts in the Middle East) but does not analyze whether and how news outlets rely on this agency material. Therefore, it is far from clear to what extent news media rely on news agencies for war coverage and how this changes over time.

Compared to research on news agencies, research on news media as sources for other news media in war reporting is even more scarce. Some studies dating from the 1990s and 2000s examine the (allegedly) large role of the US-based television news channel CNN in international news flows and even regarding policymakers, considering a possible "CNN effect" (Gilboa, 2005). Again, only research on general topics beyond wars and violent conflicts can inform us of what role news media could play as sources. Scholars have introduced concepts such as "intermedia agenda-setting" (Vliegenthart and Walgrave, 2008) to measure the impact of media types on other new media, but they analyze how topic agendas are built instead of measuring whether news media are explicitly picked up as sources. Other studies use media quotes and media references by outlet as an indicator of the self-referentiality of media (Mathis and Humprecht, 2018). Sourcing other news media is a central question in studies on "churnalism"; here, scholarship considers "textual reuse" as a practice of direct copying from competitors—a practice where the original source is not necessarily made transparent (Nicholls, 2019). Again, these studies have broader implications for journalistic practice in general but do not address the specific issue of war coverage.

Finally, social media platforms have gained traction in the digital age in the news production process (Molyneux and McGregor, 2021). Journalists are increasingly incorporating tweets, Facebook posts, Instagram photos, and YouTube videos from individuals and

organizations into their political news coverage; in this sense, social media sources are those that journalists access *via* social media platforms, such as Facebook, Twitter, and Instagram (Fisher, 2019). It is claimed, also in periods of war, that the presence of social media platforms has fundamentally changed the practice of conflict news production. With social media platforms constituting channels that can potentially increase the diversity of sources, "many more and different communicators and actors are contributing to the production of media content than in the past" (Fröhlich, 2019, p. 289). So far, this unpredictability has not led to a clear picture. As in news coverage in general, it is not clear exactly which types of actors as sources manage to shape the news about wars. There are indications that political elite actors are increasingly using social media platforms as strategic tools during conflicts to both bypass and influence legacy media (Wolfsfeld and Tsifroni, 2019), which tends to reinforce existing power relations and an ongoing dominance of elite actors in the news (Brands et al., 2018). However, others see an increase in the diversity of voices (Fisher, 2019), as well as in the news coverage of wars, violent conflicts, and protests (Bennett and Segerberg, 2012; Sacco and Bossio, 2015). Again, strikingly, there is hardly any recent research with content-analysis data that measures to what extent social media sources are actually incorporated into war coverage.

2.1.2. Source types in different media types

With a transactional understanding of news production, it is clear that attention has to be paid to the media side as well. Even though encompassing "media logics" might exist in a journalistic field overall, the specific use of sources will crucially depend on different editorial policies and news organizations' strategies (Baden and Meyer, 2019) based on their structural constraints and opportunities: "media types matter" as antecedents of news (Strömbäck and van Aelst, 2010). Media types are groups of media outlets that share certain characteristics, such as business and revenue models (e.g., reliance on advertising instead of subscription revenue), audience orientation (e.g., up-market vs. down-market newspapers), production schedules (e.g., daily or weekly outlets), and media channels (e.g., press, television, online). For instance, in their cross-country content analysis of political news, Reinemann et al. (2017, p. 147) concluded that the "medium type explains the extent to which more hard news or less hard news is published" (i.e., public TV and broadsheet newspapers offered more hard news than commercial TV or tabloids). However, while there is ample research on differences and similarities in media content among different media types in general (Humprecht and Esser, 2018; Cushion, 2022), for specific topics (e.g., Rohrbach et al., 2020), and in foreign news coverage (e.g., Brüggemann and Kleinen-von Königslöw, 2013; Chan and Lee, 2013), we could not find any recent studies that compared how different media types use sources in war coverage. For instance, a recent large-scale study included various media analyzed cross-country differences but not differences among media types (Fengler et al., 2020). This shortcoming is unfortunate as comparisons between media types would reveal to what extent structural features beyond actors' input shape the news. Furthermore, comparing media types also helps embed the relevance of the findings in view of media use. In order to assess the "quality" of political information environments on any given subject, it is necessary to empirically compare the

performance and news patterns across the breadth of the most significant national news media outlets (Cushion, 2022).

2.1.3. Research questions and the case

Given that previous literature has not been conclusive about the relevance of these source types when journalists cover a major war, we have formulated the following research questions:

> RQ1: To what extent is news coverage of the war in Ukraine shaped by sources such as political and military actors, news agencies, other news media, and social media?
> RQ2: Can structural features apparent in media types explain the use of these sources?

With our study, we focus on news coverage in Switzerland, a country which is not one of the war parties. As such, our interest lies in an "outside" perspective of news media in a country not directly affected by the theater of war. As for the war in Ukraine specifically, Switzerland is an interesting case to study. It shares several characteristics with other countries but also shows certain peculiarities. First, like many countries, Switzerland not only represents a country not directly participating in the war but also one with a difficult role as to how to position itself in the escalating conflict. On the one hand, Switzerland considers itself a neutral country, which is why Switzerland, lying at the heart of the European continent, has so far shied away from becoming a member of the European Union (EU) and even of the more loosely coupled European Economic Area (which the non-EU members Iceland and Norway are part of); it is not a member of the North Atlantic Treaty Organization (NATO) either. On the other hand, it has close political and economical ties to the EU and to the US, which is why Switzerland has decided to apply most of the sanctions implemented by the EU and the US against Russia. Switzerland also voted in favor of the resolutions of the United Nations (UN) condemning the Russian invasion in March 2022 and October 2022. Like many countries, Switzerland is partially dependent on energy supplies from Russia (around 7% of its energy came from Russian gas before the war), albeit not to the same extent as many other European countries. It is also one of the world's leading trading centers, where financial operations of multinational corporations from the (raw) energy industry are conducted, among them those of Russian-controlled oil and gas companies.

Second, as a small, potentially vulnerable, and highly globalized country, Switzerland has long been dependent on the rule of law and stable relations on a global scale, which is why international news has traditionally been an important element of news coverage. In fact, in a study of foreign news on television, Switzerland is among the countries with the highest share of foreign news and the highest number of different foreign countries visible in the news (Wilke et al., 2012).

Third, in terms of media structures, Switzerland is considered part of the "central" model of media and politics, according to Brüggemann et al. (2014), or the "democratic-corporatist" cluster, in line with Humprecht et al. (2022). Its media system is mainly characterized by strong public broadcasting, a strong press market, high professionalism, strict ownership regulation, and low press subsidies. Moreover, in Switzerland, several media types exist, which differ in terms of their business models and the types of journalism

they produce (Udris et al., 2020): in addition to public service broadcasting, advertising-based, mass-market-oriented news media in the form of cost-free newspapers and tabloids—including their websites—play a large role, as do several subscription newspapers and their websites. One special feature of the Swiss media system is the small size of the media market, which is further segmented into three submarkets based on language regions (Puppis, 2009). The market in German-speaking Switzerland consists of 5.2 million adults, while those in French-speaking Switzerland (1.8 million) and especially in Italian-speaking Switzerland (roughly 300,000) are even smaller. This segmentation therefore significantly reduces the size of the already small media market within which Swiss media can operate.

2.2. Analytical approach

In this paper, we examine how 13 online media in Switzerland cover the escalating conflict, focusing on the first 3 months following Russia's invasion of Ukraine on February 24, 2022. We conduct a manual content analysis of 1,198 news articles. Since our analysis is part of a larger project, these 1,198 articles are part of a larger stratified sample of 1,950 news articles (150 for each outlet) drawn from a pool of all the articles that contain the word "Ukraine" at least once. We chose a stratified sample to equally present outlets in the data and to achieve a robust analysis at the outlet level. A team of trained coders decided whether each article actually related to "the war" (also in a broad sense). If an article did not, it was excluded. We randomly added sample articles until we had 150 coded articles per outlet in our sample. As for the type of news coverage, all types of articles are included, with the exception of live tickers, audio or video broadcasts embedded on a news site, and reader comments. The original stratified sample makes no distinction between topics or between domestic and foreign news and, thus, extends the analysis to news coverage that does not necessarily focus only on the theater of the war in Ukraine itself but also on the war's consequences for domestic politics or for other countries. For the purpose of this paper, we include all the articles that are understood to be "foreign news coverage" and discard all articles with a domestic (Swiss) focus (for this variable, cf. below). These remaining 1,198 articles make up 61.4% of the original stratified sample.

2.2.1. Content analysis: Measures

The coding is part of a larger project on war coverage. For this paper, we select certain variables, which, in isolation or in combination with other variables, help us find information on the use of news outlets' sourcing practices. All the variables are coded on the basis of the headline, lead, byline, and first few paragraphs leading up to the following section title. Each variable can be coded once per article.

In order to better contextualize news coverage of the war in Ukraine and to better link our measures to structural features, we code the main geographical scope and the main topic of an article, which we use to build subsamples of news coverage. Geographical scope is coded from the perspective of Swiss media, leading to the differentiation of regional news, national news, bilateral news (i.e., Switzerland in bilateral relations with a foreign country or institution), news about a foreign country (e.g., Ukraine), and news about transnational or multinational news (e.g., negotiations between

Ukraine and Russia). The latter two categories are aggregated as "foreign news coverage," which is the object of analysis for our paper. As mentioned above, articles with another geographical scope (i.e., a domestic focus) are discarded for the following analysis.

The 10 main topics are then aggregated into five themes: war coverage in a narrower sense (e.g., descriptions of the fighting, military strategies), politics and diplomacy (e.g., economic sanctions against Russia by the US and the EU), consequences of the war (e.g., the cost-of-living crisis in Western European countries), prominent persons (e.g., features on Ukrainian President Zelensky), and a residual category of other topics.

As for the use of sources in the news, we measure the visibility of three types of sources: political actors (from the government) and military sources, including the country or institutional origin of these sources (e.g., Russian President Vladimir Putin, the Ministry of Defense of Ukraine, NATO); news media (e.g., the New York Times, the BBC, the Washington Post); and social media platforms (e.g., Twitter, Telegram, Facebook). For each source type, based on a code list, only one source is coded and only if it dominates the article (i.e., is highly visible) and provides "new" information in the form of messages. The reason we distinguish three types of sources is also to disentangle communicators and channels. For instance, a Twitter post by Ukrainian President Zelensky is coded both as a government source (from Ukraine) and as a Twitter source. In addition to capturing these source types, we also measure the authorship (i.e., whether a news article is produced by an outlet's own journalists, maybe even specialized correspondents on the ground, or whether it relies on news agency reports as its main sources), whereby we distinguish between news agency reports, which are edited, and news agency reports, which are not edited by a news outlet.

Five trained human coders participated in the coding of the news articles. The coders were university students who held positions as student research assistants at [omitted for peer review] before the coding took place. The research assistants are specifically hired for carrying out manual content analysis projects and receive extensive and regular training during their employment. For this project on source usage in coverage of the Ukraine war, the coders participated in additional specific training sessions, and two intercoder reliability tests were carried out during the 3 weeks of data collection. For this purpose, a randomized sample of 65 unique articles was coded by every member of the team. All the variables show satisfactory values of intercoder reliability (Krippendorff's Alpha > 0.75). In addition, meetings with the team were held every few days to ensure the rigor of the coding and discuss difficult cases.

2.2.2. Material and data collection

Taking into account different structural features that can explain news coverage, we select 13 widely used online news media with relatively high reach and that belong to three media types with regard to their respective business models: (1) online news outlets originating from established print outlets, which mainly rely on subscriptions (subscription media); (2) online news outlets from Switzerland's main public service broadcaster, which operates in German and in French with two different organizations and hence produces different news content (PSM: public service media); and (3) online news by tabloid papers and "online-only" players, all of which are cost-free and heavily rely on advertising (advertising-based). We include news outlets from both German-speaking Switzerland, the

TABLE 1 Overview of the media sample.

Outlet	Media type	Language region	Weekly reach within language region
aargauerzeitung.ch	Subscription	G	4%
nzz.ch	Subscription	G	9%
tagesanzeiger.ch	Subscription	G	10%
24heures.ch	Subscription	F	16%
letemps.ch	Subscription	F	12%
srf.ch	PSM	G	32%
rts.ch	PSM	F	33%
20minuten.ch	Advertising-based	G	45%
20minutes.ch	Advertising-based	F	48%
Blick.ch	Advertising-based	G	26%
bluewin.ch	Advertising-based	G	18%
lematin.ch	Advertising-based	F	21%
watson.ch	Advertising-based	G	21%

Language region: G, German-speaking Switzerland; F, French-speaking Switzerland Weekly reach within language region: data from Reuters Institute Digital News Report 2022 (Newman et al., 2022).

larger language region, and French-speaking Switzerland, the smaller language region. We do not include outlets from the two even smaller language regions (i.e., Italian-speaking and Rhaeto-Romanic-speaking Switzerland). However, as our main goal is not to explain the differences between the two language regions, we do not use the same number of outlets in all the cases for both language regions, but rather try to use a sample typical of each language region. Weekly reach numbers are presented in Table 1; they reflect the weekly reach within each language region.

3. Results

Before turning to the sources used in war coverage, an overview of the topics is helpful for contextualization. An analysis of the topics shows that the war in Ukraine is discussed from various angles (Table 2). On the one hand, war coverage in a narrower sense (i.e., war development and war strategies) constitute a substantial share of the overall reporting (38.3%). On the other hand, various other topics, such as political and economic consequences (24.4%) or diplomacy (25.0%), are visible as well. This underlines the fact that news coverage of the war in Ukraine includes much more than reporting on the actual development of the theater of war.

3.1. Source types in the news

In foreign news coverage of the war, slightly more than half of all news articles can be attributed to editorial contributions (55%), that is contributions from staff members (41.7%) and own correspondents (13.4%; Table 3). Of all the news items, 40.7% come from news agencies, 9.1% take the form of news agency reports that have been partially edited by an outlet's own staff, and 31.6% are news agency reports that have not been edited at all. Of the whole sample, 3.9%

TABLE 2 Topics in foreign news coverage about the war in Ukraine.

Topics in coverage (n = 1,198)	
Topic	Share of articles
Politics and diplomacy	25.0%
War coverage	38.3%
Consequences of the war	24.4%
Prominent figures	7.8%
Other	4.5%

are contributions from guest authors, and 0.4% have no byline and cannot be assigned to one of the other categories.

Overall, the findings demonstrate the great importance of news agencies, which seem to be the most feasible way for many media companies to continuously cover war-related topics and events abroad. A breakdown into media types shows distinct patterns: subscription media have the highest share of staff-produced news because they have a high share of articles produced by their own correspondents (32.2%), and the lowest share of agency material (9.7% combined). At the other end, advertising-based media have the lowest share of staff-produced news because they have hardly any correspondents (0.8%) and because they rely mostly on agency material (61.7%, especially non-edited material: 53.2%); at bluewin.ch, a mail provider also offering news, a very high share of 94.6% comes from news agency material. PSM fall in between these two media types, albeit resembling subscription media more than commercial media. Their overall share of staff-produced news is 66.9% combined, with articles by correspondents making up 17.9%. In 31.7% of all the articles, PSM rely on agency material and most often edit it (30.3%).

In addition to news agencies shaping news coverage, we can see a relatively high visibility of the other three types of sources, albeit to varying degrees (Figure 1): overall, political actors from the government and military sources frequently appear in news coverage (31%) and more so than news media (23%) and social media (16%). Thus, while we see clear signs of social media, especially Twitter, becoming important and sometimes offering non-official sources in war reporting, government and military officials are still the main access point and, thus, manage to keep shaping the news.

Among political and military sources, sources from Ukraine (11%) are more visible than sources from Russia (7%). State or military sources from the EU (2%), NATO (1%), or the large NATO countries of the US (4%), France (<1%), and Germany (<1%; 8% altogether) also play a role, not least because of the much-discussed measures, such as arms deliveries for Ukraine and economic sanctions against Russia. If we assign the state military sources to two camps, we find a significantly higher presence of the "pro-Ukraine" camp vis-à-vis Russia. This finding is accentuated in war reporting in the narrower sense (i.e., if we zoom in on the topic of "war coverage"). In this field, which makes up 38.3% of the examined foreign news coverage, state or military sources from Ukraine play a central role in 21% of the reports (together with the EU and NATO in 27%), which is significantly more frequently than Russian sources (12%).

Other news media are sources of news in 23% of articles with regard to foreign news coverage. While this is lower than for political

TABLE 3 Authorship of news.

Media type	Outlet	Editorial	Correspondents	Guest authors	Edited agency material	Non-edited agency material	No byline	No. of articles
Subscription	aargauerzeitung.ch	52.0%	42.0%	2.0%	2.0%	2.0%	0.0%	50
	nzz.ch	47.1%	30.8%	17.3%	1.0%	3.8%	0.0%	104
	tagesanzeiger.ch	56.0%	32.0%	1.3%	9.3%	1.3%	0.0%	75
	24heures.ch	49.3%	23.9%	1.5%	0.0%	25.4%	0.0%	67
	letemps.ch	38.1%	34.3%	21.0%	1.0%	5.7%	0.0%	105
	Total	47.4%	32.2%	10.7%	2.5%	7.2%	0.0%	401
PSM	srf.ch	50.6%	25.3%	1.3%	21.5%	1.3%	0.0%	79
	rts.ch	47.0%	9.1%	1.5%	40.9%	1.5%	0.0%	66
	Total	49.0%	17.9%	1.4%	30.3%	1.4%	0.0%	145
Advertising-based	20minuten.ch	60.2%	2.0%	0.0%	32.7%	5.1%	0.0%	98
	blick.ch	70.9%	0.0%	0.0%	1.9%	27.2%	0.0%	103
	bluewin.ch	5.4%	0.0%	0.0%	3.6%	91.0%	0.0%	111
	watson.ch	66.4%	2.7%	0.0%	11.5%	15.0%	4.4%	113
	20minutes.ch	14.2%	0.0%	1.9%	0.9%	83.0%	0.0%	106
	lematin.ch	8.3%	0.0%	0.0%	2.5%	89.3%	0.0%	121
	Total	36.5%	0.8%	0.3%	8.4%	53.2%	0.8%	652
Total		41.7%	13.4%	3.9%	9.1%	31.6%	0.4%	1,198

FIGURE 1
Sources in the news. $n = 1,198$ news articles.
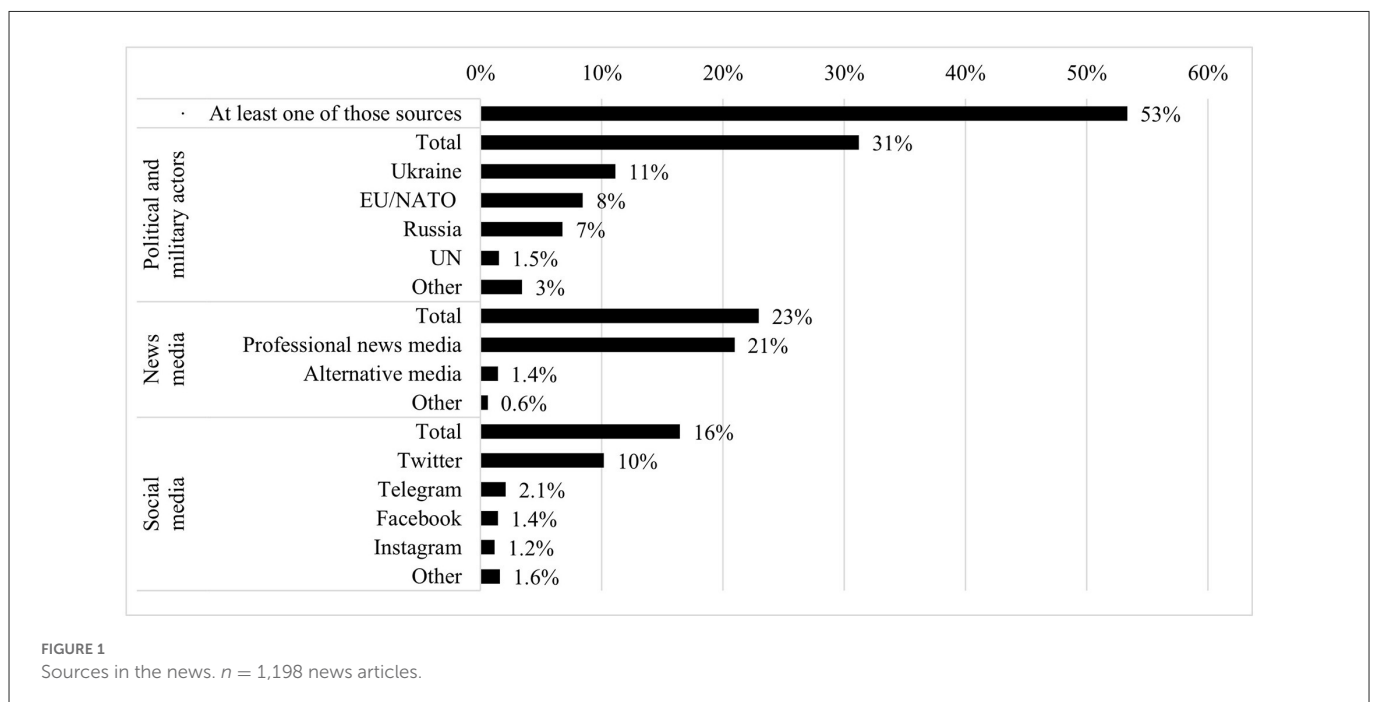
or military sources, one out of four articles still indicates a rather substantial share. It underlines the need for many Swiss media to rely on other news media. Examining media sources in more detail, we can see that news media sources are mostly professional, independent news media (21%), while "alternative" or other media, under which we also subsume Russian outlets dependent on the Russian government, are used in only 2% of all articles. Thus, it is quite common to observe Swiss media news reports that

discuss breaking news or investigative reporting, usually from larger English-speaking news sources. For example, blick.ch discusses the Washington Post's article on an arms delivery by the US to Ukraine, which took place as early as December 2021.

In comparison to news media, social media are used as sources slightly less often (16%). Still, one in six articles is primarily based on information stemming from social media, which is quite substantial. Among social media sources, Twitter dominates (10%). Telegram

(2.1%) is used as a source less often but still more than other platforms, such as Facebook (1.4%) and Instagram (1.2%). The important role of Twitter most likely reflects its high relevance and status among elite actors and journalists, while the visibility of Telegram in Swiss media most likely mirrors its substantial use in Russia and Ukraine.

3.2. Explaining sourcing practices

Our results suggest that structural features of media types lead to distinct sourcing practices. Resources matter. Advertising-based news media are those that rely most heavily on all three types of sources: government and military (sources in 38% of all the articles), news media (28%), and social media (23%), which means that 67% of all the articles found in advertising-based news outlets use at least one of these sources (Table 4). Subscription media and public service broadcasting use each of these sources to a lesser extent, indicating their willingness (and capacity) to actively look out for other sources and conduct their own in-depth reporting.

However, these results partially gloss over the fact that there are some notable within-type differences in the use of sources (Table 4). Amid advertising-based outlets, the mail provider bluewin.ch relies much more heavily on political and military actors (63%) than advertising-based outlets on average (38%), while 20minuten.ch relies heavily on other news media (44 vs. 28% on average) and lematin.ch on social media sources (36 vs. 23% on average). Amid subscription media, the use of at least one of these sources is much higher at 24heures.ch (61%) than at nzz.ch (20%).

To check whether media types still matter despite some heterogeneity and to examine which other structural features have an impact on the use of sources, we calculated binary logistic regression models for each source type (political actors/military, social media, news media) as the dependent variables. We transformed our variables into binary measures that indicated whether each source was used for an article (1) or not (0). As independent variables, we added the language region, media type, if an article was based on news agency content (including partially edited agency reports), and if the article was written by a correspondent.

Table 5 shows the results. Articles based on news agency content (OR = 2.88; $p < 0.001$) were more likely to feature sources from political actors from the government or the military. The language region (OR = 1.31; $p = 0.058$), whether an article is published in a subscription media outlet (OR = 0.90; $p = 0.660$) or in an advertising-based media outlet (OR = 1.26; $p = 0.286$) compared to the reference category of PSM, and authorship by a foreign news correspondent (OR = 1.15; $p = 0.538$) did not affect the likelihood that an article features a military/government source.

Social media as a source were less likely to be observed in outlets of the German-speaking region (OR = 0.54; $p < 0.001$) and were more likely to be featured in commercial media (OR = 3.39 $p < 0.001$) than in PSM, which was the reference category. However, whether an article was published in a subscription media outlet (OR = 1.18; $p = 0.638$), was based on news agency material (OR = 0.95; $p = 0.783$), or was written by a correspondent (OR = 0.60; $p = 0.160$) did not influence the likelihood of social media being used as a source.

Articles published in an advertising-based outlet (OR = 2.07; $p = 0.003$) were more likely to contain a news media source than articles in a PSM outlet. Articles based on news agency material (OR = 0.51; $p < 0.001$) as well as articles written by correspondents (OR = 0.49;

TABLE 4 Sources in media types and news outlets.

		Political and military actors	News media	Social media	At least one of these sources	No. of articles
Subscription	aargauerzeitung.ch	26%	26%	14%	44%	50
	nzz.ch	8%	13%	4%	20%	104
	tagesanzeiger.ch	21%	15%	4%	32%	75
	24heures.ch	30%	28%	22%	61%	67
	letemps.ch	26%	10%	7%	33%	105
	Total	21%	17%	9%	36%	401
PSM	srf.ch	19%	15%	11%	37%	79
	rts.ch	36%	20%	5%	44%	66
	Total	27%	17%	8%	40%	145
Advertising-based	20minuten.ch	32%	44%	24%	77%	98
	blick.ch	29%	31%	10%	55%	103
	bluewin.ch	63%	16%	21%	75%	111
	watson.ch	42%	28%	19%	65%	113
	20minutes.ch	29%	30%	25%	64%	106
	lematin.ch	34%	21%	36%	68%	121
	Total	38%	28%	23%	67%	652
Total		31%	23%	16%	53%	1,198

TABLE 5 Logistic regression models for source types.

Predictors	Political/military		Social media		News media	
	OR	CI	OR	CI	OR	CI
Intercept	0.21***	0.13–0.33	0.13***	0.07–0.24	0.30***	0.18–0.48
Region[a]	1.31	0.99–1.72	0.54***	0.38–0.76	0.91	0.67–1.23
Subscription[b]	0.90	0.57–1.44	1.18	0.60–2.46	0.94	0.57–1.59
Advertising-based[b]	1.26	0.83–1.94	3.39***	1.85–6.75	2.07**	1.29–3.44
News agency[c]	2.88***	2.12–3.92	0.95	0.65–1.38	0.51***	0.36–0.71
Correspondent[d]	1.15	0.72–1.81	0.60	0.27–1.18	0.49*	0.28–0.83
Observations	1,198		1,198		1,198	
R^2 Tjur.	0.073		0.051		0.037	

*p < 0.05.
**p < 0.01.
***p < 0.001.
The table shows odds ratios (OR) and 95% confidence intervals.
[a]French-speaking region is the reference category.
[b]PSM is the reference category.
[c]No news agency is the reference category.
[d]No correspondent is the reference category.

$p = 0.011$) were less likely to include a news media source. Articles published in subscription media (OR = 0.94; $p = 0.802$) and PSM did not significantly differ in terms of their likelihood of containing a news media source. News media sources were not more likely to appear in the German-speaking region (OR = 0.91; $p = 0.523$) than in the French-speaking region either.

4. Discussion

Our study analyzed how the media use sources for their news coverage of the war in Ukraine, focusing on the case of Switzerland. Based on a manual content analysis of 1,198 news articles in 13 online news media, we examined different types of sources visible in news coverage. Distinguishing between political and military sources, on the one hand, and sources from the media sector, on the other, and comparing their prevalence among media types allowed us to show specific patterns in war coverage, which are the result of specific structural features.

First, political actors (from the government) and military sources are the most important sources in war coverage, more so than other news media and especially social media sources. In this respect, our results lend support to a long-standing observation that elite actors still dominate in war coverage, despite more recent expectations that independent sources *via* social media might serve as a powerful corrective (Fröhlich and Jungblut, 2019). Given the fact that state actors have been historically known to apply propaganda techniques during wars (e.g., spreading rumors; Lukito, 2019), journalists' reliance on government and military therefore runs the risk of further spreading biased and false information.

Second, the fact that around 40% of all news articles stem from news agencies points out the very powerful and often understudied role of news agencies with regard to war coverage. We fully agree with Boumans et al. (2018, p. 1768), who, in light of the dominance of news agency material in online news, state that news agencies should be placed high on the agenda of news production scholars. Our study also showed that news agency reports use political and

military sources much more often than reports by staff members. Future studies will have to show, with input-output analyses of news agency material, whether the agencies' focus on elite sources results from their general sourcing practices or whether it is mainly news outlets that select a distinct type of news agency material.

Third, our study has shown that, despite their lower prevalence than those from government and military sources, reports from other news media and social media sources play an important role as well: 23% of all articles prominently rely on other news media as sources and 16% on social media sources, above all Twitter. The "routine reliance" on journalistic sources is thus complemented with a reliance on social media sources (Reinemann, 2004). This is a clear indication of the self-referentiality in hybrid media systems and a sign that sourcing practices in journalism typically include the constant monitoring of competitors' news coverage through digital channels and of activities on social media platforms (Brands et al., 2018). As Boczkowski (2009) concluded following his study of newsrooms in Argentina, this constant scanning and monitoring activity goes hand in hand with a decline in first-hand encounters to learn about stories. One direct indication in our data is the fact that articles produced by foreign correspondents rely less on other news media reports than articles with other types of authorship.

Fourth, our study is another reminder that media types matter (Strömbäck and van Aelst, 2010; Fröhlich and Jungblut, 2019). There is no typical war coverage in "the media," but rather a very different use of sources in media types. Compared with subscription media and with websites of public broadcasters, mass-market-oriented media that rely heavily on advertising are not only more likely to use news agency material but are also more likely to incorporate stories from other news media and social media sources into their war coverage. This reliance on other news providers also reflects the fact that advertising-based media do not have, or do not invest in, networks of foreign news correspondents. Instead, advertising-based media produce their war coverage mainly from their editorial offices, far away from the actual wars, with journalists constantly scanning and monitoring media sources. In this respect, our study suggests that "churnalism" (Johnston and Forde, 2017) is most widespread in

advertising-based media, which provide cost-free information. While this finding might not be surprising, it is still highly relevant because it underlines the importance of organizational factors for news production (e.g., compared to individual-level factors; Hanitzsch and Hoxha, 2019, p. 170); it is also highly relevant given the fact that these mass-market-oriented media are among the most widely used news outlets in the country.

Fifth, our study also contributes from a methodological stance. The detailed coding by human coders allowed us to differentiate between actors as sources or objects. For instance, we were able to grasp whether social media, such as Twitter, are merely included as objects in the articles (e.g., which role social media play with regard to communication among refugees) or if they are actually referred to as sources of information in the articles. This important differentiation is a common challenge for automated approaches.

Our study comes with some limitations. It is a study of the news coverage of one war regarding news media from one country. Scholars conducting comparative analyses across wars and violent conflicts remind us that "each war/conflict is different" (Fröhlich, 2019, p. 287): accordingly, country-comparative and/or conflict-comparative analyses would be useful here. Our case, Switzerland, shares several characteristics with other countries—no direct involvement in the war, no membership of a large military alliance, official support of UN resolutions condemning the Russian invasion, a professional media system with both private and public service media and, a small state with a long tradition of foreign news coverage, etc. Still, we acknowledge that, in the end, every country is special and each case unique. In this sense, one should be cautious when generalizing our findings. As for our dependent variables (i.e., the sources in news coverage), we did not investigate how the sources were evaluated and which frames they sponsored, which are dominant concepts in research on war coverage. Nevertheless, our literature review revealed that the research focus on frames and evaluations has also meant a shift away from empirically capturing the sources visible in news coverage. In this sense, we try to bring sources "back into" research on war coverage. Furthermore, our study does not claim to cover all aspects of source usage in war reporting. A growing strand of research has linked the propaganda of state actors (e.g., Lukito, 2019) to disinformation (e.g., Freelon and Wells, 2020). Under certain circumstances, news media manage to reveal and refute disinformation by using forensic methods, for instance (cf. Hauter, 2021). With our design, we were unable to capture how such strategies and tactics employed by the war parties were reflected in news coverage and how potential disinformation was debunked. This would require a very detailed and time-consuming reconstruction of the evidence. Despite these limitations, we were able to draw an overall picture of source usage in the coverage of the Ukraine war in Swiss media, which can serve as a starting point for further studies.

Data availability statement

Author contributions

LU, DV, and ME contributed to the conception and design of the study. MW contributed to the database tests. LU and DV wrote the first draft of the manuscript. ME and MW edited the manuscript. LU provided the descriptives. DV created the regression model. All authors contributed to reading and revising the manuscript and approving the submitted version.

Funding

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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