A Typology of Fact-Checking Resources

From False/True Verification to Information Literacy

Angeliki Monnier, Julie Dandois, Agnieszka Filipczyk, Eirini Konstanta, Anna Losa-Jonczyk, Costas Mourlas

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A TYPOLOGY OF FACT-CHECKING RESOURCES
FROM FALSE/TRUE VERIFICATION TO INFORMATION LITERACY

Abstract. – This article maps fact-checking resources and establishes a typology of the latter, depicting the variety of available tools. The approach is bottom-up: in the frame of a European project on collaborative fact-checking, students in journalism and communication studies coming from France, Greece and Poland were asked to list and classify all fact-checking resources that they use or they are aware of. Findings revealed a common denominator, i.e., the existence of a variety of understandings of this expression, which this study has mapped. However, it also shed light to differences linked to the role of national contexts.

Keywords. – Fact-checking, fact-checking resources, fact-checking tools, verification of information, information literacy, information disorder.

Une typologie des ressources de *fact-checking*. De la vérification du faux/vrai à la maîtrise de l'information

Résumé. – Cet article propose une cartographie des ressources de *fact-checking* et établit une typologie de celles-ci, décrivant la variété des outils disponibles. L'approche est ascendante : dans le cadre d'un projet européen sur le *fact-checking* collaboratif, des étudiants en journalisme et communication venant de France, de Grèce et de Pologne ont été invités à répertorier et classer tous les outils de *fact-checking* qu'ils utilisent ou qu'ils connaissent. Les résultats ont révélé un dénominateur commun, à savoir l'existence d'une variété d'acceptations de cette expression, que ce travail a cartographiée. Cependant, il a également mis en lumière les différences liées au rôle des contextes nationaux.

Mots clés. – fact-checking, ressources de fact-checking, outils de fact-checking, vérification de l'information, littératie informationnelle, désordre informationnel.

As the World Wide Web has become the most prevalent medium of news, the journalistic activity of checking facts has intensified, its practices becoming more diversified and intricate than ever before. Countering the spread of disinformation over the past years has given rise to a large variety of fact-checking resources. Various platforms and devices do indeed exist, whose diversity in terms of functions and design entail diverse uses (search engines, archives, reverse image/video search, collaborative platforms, websites, media sections, etc.); hence the divergent or even confusing understandings of fact-checking tools, methods and processes. Yet, there seems to be a clear gap in what we know about fact-checking resources, especially in their variation and typology. On the one hand, literature on the subject tends to focus on the role of journalists, the stakes of disinformation, the circulation of fake news, etc. On the other hand, fact-checking and verification techniques tend to be analysed in terms of effectiveness and performance, values, challenges, automation, crowdsourcing, perception, and involvement, etc. (Dias & Sippitt, 2000; Monnier, 2023). Little has yet been researched on what a fact-checking resource is and how classifications of the latter can be operated.

The present initiative aspires to contribute to mapping fact-checking resources by establishing a typology of the latter depicting their variety. The approach is bottom-up: in the frame of a European project on collaborative fact-checking, we asked students in journalism and communication studies coming from France, Greece and Poland to list and classify all fact-checking resources that they use or they are aware of. The results of this initiative revealed a common denominator, i.e., the existence of an overall wide acceptance of fact-checking resources. It also shed light to differences linked to the role of national contexts.

In what follows[1], we will first go through common classifications of fact-checking resources, in order to highlight the variety of criteria which come into play. This endeavour will also bring us to identify underlying problematics that relate to these classifications. We will then provide information about the context of the empirical study and the project the latter is related to. We will continue by presenting the findings of the survey, revealing the multiple understandings of fact-checking resources, as crystalized in students' inputs. Finally, we will discuss the discrepancies observed in the findings and try to apprehend them in the frame of national contexts and policies in relation to disinformation in France, Greece and Poland. Beyond that, we will propose a typology of fact-checking resources which takes into account the observed diversity of resources and their uses.

[1] The present article constitutes an updated version of a report written by the authors and published on the European Digital Media Observatory's (EDMO) website in 2022 (Monnier *et al.*, 2022b, for a summary in French see also Monnier, Dandois, 2022). The authors wish to thank Prof. Jerzy Gołuchowski, University of Economics in Katowice, Poland, Department of Informatics and Communication, for reading and commenting this paper.

Before we go any further, it has to be mentioned here that many researchers warn against oversized expectations vis-à-vis fact-checking and against a certain enthusiasm of our contemporary societies for this practice (Uscinski, Butler, 2013; Uscinski, 2015). They point to fundamental problems related fact-checking (Lim, 2018; Vinhas & Bastos, 2022): its epistemological legitimacy, the logistics of its implementation, its inherent biases and the limits of its effectiveness, its alleged objectivity and its consideration of the ambiguities of complex realities, etc. Indeed, verifying facts leads to questioning the rules that determine them and the way in which the material, social and discursive contexts structure the investigation of the factual. However, as others point out (Amazeen, 2013; 2015; Graves, 2016), reservations about the limits of the verification process do not mean that the effort should be abandoned, and novel approaches should continue to be researched (Krause *et al.*, 2020; Kyriakidou *et al.*, 2022). This is the premise on which the present research builds upon.

Common classifications of fact-checking resources

Over the last decade, one can notice a significant development in the field of journalistic fact-checking, especially regarding political news (*e.g.* presidential elections) and information on health matters (*e.g.* vaccine safety), which have become a fact-checking domain on their own (Fabry, 2017). Indeed, fact-checking has gained importance as the influx of information has widened due to the networking structure of the Internet. Consequently, countering the worldwide online dis-misinformation[2] phenomenon necessitates a considerable amount of work for fact-checkers, since everybody can be a consumer, creator and disseminator of disinformation. In this context, fact-checking is being undertaken not only by media outlets but also by an increasing number of international organisations, NGO (non-governmental organisations), NPO (non-profit organisations), academic projects, as well as numerous non-journalists in the social media landscape.

Besides the variety of fact-checking contributors, the methodologies of fact-checking also diverge. Fact-checking methodologies refer to the selection processes, research methods and claim evaluations. Fact-checkers commonly implement fundamental fact-checking techniques, use credible sources and apply certain standards and codes of principles they commit to when conducting research on claims (Juneström, 2021). Fact-checking principles are hence usually based on transparency, non-partisanship, fairness, openness, etc. However, this does not mean that their way of approach and the methodology used for checking facts is always the same. If that would be the case, fact-checking could

[2] Wardle et Derakhshan (2017) advocate the need to distinguish disinformation, i.e. the production of misleading content with the intention of deceiving, from misinformation, i.e. the unintentional creation and distribution of false information.

probably be an automated activity. A one-way approach to checking facts is not conceivable if one considers the multiplicity of formats and media information takes. Images and video-formats demand different fact-checking methods than the traditional text-format, for instance. Consequently, this diversity in methodologies is translated into the use of a variety of fact-checking tools.

The understanding of what constitutes a fact-checking resource is key for journalists, professionals, but also for the general audience. As the multi-modal aspect of digital information involves new challenges for fact-checkers, more sophisticated and refined approaches to fact-checking are needed (Nygren *et al.*, 2021:1-3). Yet, there seems to be a clear gap in the literature regarding the definition of fact-checking resources, especially in their variation and typology.

A traditional classification resolving in different designs and uses can be made between fact-checks as an integral part of the publication cycle of journalism (so-called "internal" or "ante-hoc" fact-checking) and fact-checks that are being conducted after publication, hence as "separate news items" (so-called "external" or "post-hoc" fact-checking) (Meulen, Reijnierse, 2020:1286). However, despite this long-term established distinction, the current notion of "fact-check" commonly refers to external fact-checking. It usually includes the functions of detecting and debunking, and pertains to a broad collection of publications/information, especially social media content. Meulen and Reijnierse even suggest that external fact-checking be recognized as a genre on its own (*Ibid.*: 1288).

Beyond this fundamental distinction, literature on the subject has primarily emphasised three research topics, namely: (i) Motivations and practices of fact-checkers (i.e., the role of journalists, the stakes of disinformation, the circulation of fake news), (ii) the impact of fact-checks and (iii) the development of tools for automatic fact-checking. Fact-checking and verification tools tend to be analysed in terms of effect(iveness) (*e.g.* Dias and Sippitt, 2020; Young *et al.*, 2017); performance (*e.g.* Lim, 2018; Nygren *et al.*, 2021); epistemology (*e.g.* Graves, 2017); users' perception and involvement (*e.g.* Brandtzaeg *et al.*, 2018; Hassan *et al.*, 2017; Robertson *et al.*, 2020); crowdsourcing (*e.g.* Allen *et al.*, 2021); or challenges (*e.g.* Stewart, 2021).

Practically, persons interested in the truthfulness of a specific news item can resort to at least two methods. Firstly, they can refer to websites that have already verified the element in question or they can fact-check it themselves. This preliminary distinction differentiates *fact-checking services* from *verification tools*. Fact-checking services are platforms seeking to "analyze and determine the *accuracy* of claims and content in the public domain and guide users on the credibility of online content" (Brandtzaeg, Følstad, Chaparro Domínguez, 2018:1110). These can take the form of collaborative fact-check platforms, fact-check media sections, fact-check websites, etc. Verification tools on the other hand are software applications that "support the process of *authenticating* online content items such as text, images, and videos [...], [hence of] verifying specific

pieces of content" (*Ibid.*: 1110-1). Verification tools can take the form of search engines, reverse image/video search, metadata extraction, etc. Verification tools usually have a more specialised function and are user-based (fact-checkers, journalists, researchers, etc.), whereas fact-checking platforms already provide an analysis and assessment of the claim and hence are more accessible to the general public. Consequently, this differentiation and the apparent diversity of fact-checking resources in terms of functions and design entail an array of different uses.

Regarding the use of fact-checking resources on the level of the audience, accessibility and ease of use are parameters that determine who can use certain fact-checking tools/services and who can't. Some of the existing fact-checking technologies are designed as open access aids destined for larger audiences. Most of them are, however, specifically intended for professional fact-checkers and journalists, who still hold a central position as gatekeepers in the verification process. In the era of "smart mobs" and "ambient journalism", user collaboration and participation in these tools remains—paradoxically—marginal, the same applying to collaboration among journalists. The gap between professionals and the news consumer is further widened by the evolution of the information sources itself (Nygren *et al.*, 2021). Content appears mainly online and in multiple formats (*e.g.* text, image, video, audio).

The above classifications take into consideration two main parameters: the nature of the resource—which is related to the overall goal of the truth-seeking process—, as well as the actors involved. They will serve as a starting point for the typology we will propose at the last section of this article. The latter will also build upon the findings of the survey conducted among students in journalism and communication coming from France, Greece and Poland, in the frame of the CAPYPSO project, which is presented hereafter.

The CALYPSO project and the context of the survey

The present study was conducted in the frame of the CALYPSO pilot project[3] (Collaborative AnaLYsis, and exPOsure of disinformation, 2021-2022), awarded in response to the DG Connect/2020/5464403 call "EU grants for small-scale online media: Supporting high-quality news products and tackling fake news" (Monnier *et al.* 2022). CALYPSO was a European cooperation aiming to contribute to the enhancement of fact-checking resources by creating a crowdsourcing environment for citizens to combat disinformation while participating in a game for good. In its conception, the concept combines the respective strengths of the general public, journalists, experts, and fact-checkers. The latter collaborate to early detect and fact-check suspected cases of disinformation, exposing

[3] Access : https://calypso.ue.katowice.pl/.

disinformation campaigns and messages in real-time, and quickly restoring the truth to minimise the impact of fake news on society.

Disinformation campaigns in this project were understood as defined by the European Commission in the Action Plan against Disinformation[4] "as verifiably false or misleading information that is created, presented and disseminated for economic gain or to intentionally deceive the public, and may cause public harm. Public harm includes threats to democratic processes as well as to public goods such as Union citizens' health, environment or security." Thus, in this Action, satire, parody, commentary or clearly identified partisan news are not perceived as disinformation content. The main goal of CALYPSO was to foster the creation of independent multidisciplinary teams established at national level in Europe, in order to increase the capability to detect, analyse, and promptly expose disinformation campaigns, to "bolster resilience against hybrid threats"[5], and, at the same time, promote news verification training activities targeted to journalists, as well as media literacy campaigns at a national level.

The CALYPSO project built upon research indicating that crowdsourcing is a promising approach to help identify disinformation (Allen *et al.*, 2021; Hassan *et al.*, 2017), also recognized by providers of social media platforms. An example is Facebook, which engaged in related pilot studies (Silverman, 2019). The Tow Center for Digital Journalism has conducted research on journalism-related crowdsourcing, though the latter is not exclusively studied in relation to fact-checking[6]. Findings of this work (based on 51 interviews, 18 surveys, and case studies) suggest that tasks that might be suitable for crowdsourcing fact-checking are: (i) Submitting claims to check: *e.g.*, the International Fact-Checking Network's code of principles[7] encourages readers to send claims to fact-check; (ii) Voting:prioritizing which stories reporters should tackle; (iii) Spreading the correct information: readers could take the results of fact-checks and repost them on forums, social media groups, and share with friends and family. This opens access to closed communities, which are by definition difficult to reach.

A recent analysis of Reddit's political fact-checking subreddit[8] argued there is a future for crowd-powered fact-checking ("crowd-checking"), and that this approach could help build a sustainable model for fact-checkers. However, crowdsourcing is a method that is also vulnerable to manipulation and errors. It is possible for users to—deliberately or not—feed journalists with false information, especially in quickly developing breaking-news situations. Several experiments such as TruthSquad and FactcheckEU have highlighted the need for collaboration with journalists to ensure the quality of the information. Within

[4] Access :https://ec.europa.eu/info/.

[5] Access :https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=JOIN%3A2018%3A16%3AFIN.

[6] Access : https://www.cjr.org/tow_center_reports/guide_to_crowdsourcing.php#typologies.

[7] Access :https://ifcncodeofprinciples.poynter.org/.

[8] Access : https://www.reddit.com/r/politicalfactchecking/.

this frame, crowdsourcing combined with collaborative journalism[9] seems a promising model for the development of fact-checking communities and digital literacy.

Gamification involves implementing game elements into real-world contexts for non-game purposes. When used to combat disinformation, gamification seems to have a positive impact on motivation both to increase fact-checking skills (media literacy) and to identify disinformation. This issue has also been discussed in recent years, *e.g.* by (Mantzarlis, 2018). Organisations such as First Draft have developed gamified products (serious games) to illustrate the effect of gamification in raising public awareness regarding disinformation. Also, previous research, although not entirely conclusive, generally supports the hypothesis according to which gamification can foster human motivation and performance in regard to a given activity (Sailer *et al.*, 2017). The results of such approaches seem to be promising, and open new horizons for the development of crowd-checking and community building in the domain of fact-checking.

Against this backdrop, the CALYPSO consortium consisted of three universities with complementary expertise in fact-checking education, a NGO, and five small-scale online media organisations, which are the ones that suffer the most from the lack of news verification resources (Graves, Cherubini, 2016; Shapiro *et al.*, 2013). Universities are located in western, central and south-eastern Europe: University of Lorraine, the National and Kapodistrian University of Athens, and the University of Economics in Katowice. France, Greece and Poland were respectively selected as representative cases of the variety and complexity of situations in Europe when it comes to disinformation and the fight against it.

More particularly, in France, a law against the manipulation of information, aiming at better protecting democracy against the different ways in which fake news is deliberately spread, was approved in its second reading at the National Assembly on 20 November 2018. This law sets out a series of obligations and procedures applied to online platforms, particularly during pre-election periods. In particular, during a 3-month stretch before elections, platforms commit to provide "fair, clear and transparent" information on candidates and their wages (amounts and origins). Moreover, the law created an emergency procedure, which gives a judge the power to order that the flow of fake information online be stopped. However, no clear and practical definition of "fake news" is provided in the law. False information is defined in the negative: information that is not true; a problematic shortcut and a loophole for search engines and online platforms. National newspapers and broadcasters have incubated the trend of fact-checking and

[9] There is a substantial literature on citizen, participatory or collaborative journalism as well as the nuances between them, *e.g.* Bowman, Willis, 2003; Glaser, 2003; Lasica, 2003a, 2003b; Gillmor, 2004; De Rosnay, Révelli, 2006; Aubert, 2009; Suárez-Villegas, 2017; Hernandez & Monnier, 2020; Brookes, Waller, 2022.

provide its most visible examples (Graves, Cherubini, 2016). Multiple initiatives exist (Bigot, 2019), though fact-checking does not win unanimous support.

In Greece, since the beginning of the debt crisis (2009), the media industry has faced huge losses in advertising revenues, starting cutting costs by laying off employees, and worsening the quality of journalistic content (copy-paste, clickbait etc.). In this context, media distrust became particularly widespread. A public opinion survey conducted across 38 countries by the US-based Pew Research Center (Mitchell *et al.*, 2018) found that Greeks are the most sceptical in the world towards their country's media and the way news and current affairs is reported. Only 18% of Greeks believe that their national media are doing a good or somewhat good job of reporting on political issues. This was the lowest percentage among the 38 countries surveyed. Other statistics about citizens' trust in the media and the news reveal that Greece occupies one of the lowest places of the ranking (Newman *et al.*, 2019). Fact-checking is thoroughly contested by fringes of the population, and is often seen as a form of defamation. On top of the problems caused by the financial crisis, the total absence of news verification education for professional journalists is indicative of the problem that journalism in Greece has been facing for the past years. In 2019, the Greek Parliament issued a new Law dedicated to Fake News (article 191 – LawNo, 4619/2019) which states the following: "Anyone who spreads or disseminates fake news in public or through the Internet in any way that may cause fear in an indefinite number of people or in a certain group or category of persons, who are thus compelled to commit unplanned acts or to cancel them, at the risk of causing damage in the economy, tourism or defence capacity of the country or to disrupt its international relations, will be punished by up to three years in prison or a fine". In this frame, the CALYPSO project perfectly aligned with the national policies and initiatives to fight disinformation in Greece envisaging to become a reliable ally of the regulatory authority (National Council for Radio and Television) in this battle.

Finally, Poland, has also been hit in recent years with several pandemic-related disinformation campaigns, aiming at smearing the country and turning it against the rest of Europe. Indeed, the phenomenon of the infodemic emerged on an unprecedented scale, with fake and manipulated information on Covid-19 circulating in all forms, on news portals, on social media, on discussion forums and blogs, and via instant messaging (Krawczyk, Mikulski, 2020). As all over Europe, there is worry that disinformation campaigns will curtail the actual purpose of journalism, which is "to provide citizens with the information they need to be free and self-governing" (Kovach, Rosenstiel, 2014:61). Moreover, years of censorship have weakened people's trust in institutions or organisations when it comes to news. Polish fact-checking scene is still relatively young: most of the currently active fact-checking platforms were launched within the last 12 months, and the most emblematic are Demagog and OKO.press. Several other Polish platforms have been launched recently but it is not easy to evaluate their scope and impact.

The empirical study: The various understandings of the fact-checking resources

The first goal of the CALYPSO project was to map existing fact-checking resources—before implementing a new one—and proceed to a critical analysis of them. To this end, we solicited N=36 (ULorraine: 14, UEKatowice: 16, UAthens: 6) university students of journalism and communication from the universities involved in the project. Between October 2021 and January 2022, students were asked to create a list of fact-checking tools and resources they knew and put them in categories of their choice. They created their lists individually, whilst few worked in groups of two. We used the terms fact-checking tool and fact-checking resource in their common acceptance without providing any prior definition, and with no distinction between them. The lists provided by students in France, Greece and Poland assemble a wide range of fact-checking resources, revealing a very broad acceptance of the term. They also point to the role of the sociocultural context in forging professional practices by determining available resources.

More particularly, students of France, Greece and Poland enumerate multiple fact-checking resources that do not follow the common "Fake/True Barometer". The tools listed are of various formats, with different functionalities and objectives: Platforms, media fact-check sections, news aggregation apps (*e.g.* Winno-Just the Facts, Feedly), blogs, TV programs, radio programs, collaborative technological hubs, webpages, search engines, databases, extensions (*e.g.* Project Fib, Tanbih, Crowdtangle), mobile apps (Fakehunter), pages/channels on social media (*e.g.* "Info ou intox", *France Médias Monde*, on Twitter, or "L'instant Détox" YouTube Channel), critical press reviews/media observatory websites, online games, training programs, etc. In this sense, fact-checking tools go well beyond the simple checking of facts and include media literacy education activities and resources (*e.g.* Bad news, Fake News: The Game, Spicee Educ, Fake Off, Stop Intox.fr) – or websites that verify, for instance, the legal compliance of comments made by public figures, which can be called legal-checking *(e.g.* Les Surligneurs*)*.

Similarly, a student's fact-checking tools list comprises the International Fact-checking Network (IFCN), the Third-Party Fact-Checking Program, the Journalism Trust Initiative, EDMO and ODIL, endorsed because of their "credibility standards'" and reliability. In contrast, alleged "problematic fact-checking web-sites", i.e., displaying according to the students political bias (*e.g. Observatoire du journalisme*) or being openly conspiratorial (*e.g.* Les DéQodeurs), are also included in the list. Fake fact-checking sites, or sites with fake news tendencies are in this case considered to be fact-check resources, as they can help spot disinformation claims and avoid fraudulent fact-checking sites.

In terms of content (themes), identified fact-checking resources pertain to general news, political claims (*e.g.* Lui Président), conspiratorial beliefs, rumours,

urban legends, folklore, online content and data, metadata (*e.g.* MédiaInfo), video and image verification, reliability of digital identities and websites (*e.g.* ScamDoc, WhoPostedWhat, Décodex), botometer, facial recognition (*e.g.* FindClone), deepfake analysis (*e.g.* Sensity Tool); but also, social media data and profiles, trends (Google Trends), domain names, websites and IPs (*e.g.* WHOIS), scams, frauds in eCommerce (*e.g.* FakeSpot), archived data and webpages (*e.g.* Wayback Machine, Pema CC), legal texts, academic databases (*e.g.* PubMed, Google Scholar), etc. Only a few fact-checking websites evoked by students did treat a specific topic: DecodAgri (about agricultural practices) and EUvsDisinfo (about pro-Kremlin disinformation), most resources presented not specialising in a specific topic.

As the examples indicate, the students' lists in all three countries show a wide array of fact-checking resources which vary greatly in their form and content, and, consequently in their use and objectives. For instance, 10 of 41 tools listed by the students in Poland are social media monitoring and management tools (*e.g.* Crowdtangle), used by fact-checkers for research purposes. Another example of listed tool-types are critical press review and media observatory websites (*e.g.* Acrimed, Arrêts sur Image, Odoxa). Some focus on specific goals like uncovering and combating conspiracies (*e.g.* ConspiracyWatch). Most, however, are giving a general critical overview of news subjects which, in turn, helps the reader make more informed and critical appraisals. Some of the resources listed are hence not giving fact-checked information or fact-check services per se but can be considered as complementary fact-checking aids.

The question of user engagement also appears to be part of the underlying criteria used to fabricate some lists. Students mention both resources that allow a high rate of user participation and tools that demand none. CaptainFact is one of the rare, crowdsourced fact-checking platforms where users can comment and contribute by, for instance, quoting a video's statement for it to be fact-checked, adding sources or comments, rating sources quality with votes, etc. A student even makes a category "tools for the users" in which fact-checking methodologies rather than tools are being enumerated and described: "verify the website", "verify its reliability and credibility", "verify the source, the author and the date" with the goal to "develop critical thinking skills". In this sense, a fact-checking tool would be something that, when provided, everybody can essentially use by oneself.

A last question is that of the resources' origin and language. All university students not only list fact-checking tools in their respective country, but also count multiple resources in English, as well as international tools or platforms that offer multilingual services. However, students of the University of Lorraine provide more French fact-checking tools than English ones, while those from the Universities of Katowice and Athens mainly count English ones. Only one student from Athens mentions *Ellinika Hoaxes* which is the main news fact-checking website in Greece. FactChecker.gr, another important news fact-checking website,

is not being mentioned by Greek students. Students from Poland name 11 Polish websites, though English resources remain predominant.

Finally, students not only enumerate fact-checking resources that originate or have an audience/usership in their respective country (especially in the case of France and Poland) or in English-speaking countries like the US, England and Australia (*e.g.* The Conversation). They also show knowledge of Russian (FindClone, Yandex), Portuguese (Jornal Poligrafo), African (Africa Check) and Qatar (TANBIH) originated resources. Finally, French collaborative fact-check tools, namely the 2017 FirstDraft project Crosscheck and CaptainFact, are also mentioned by Polish and Greek students respectively. Students from all three countries enumerate multilingual and multinational fact-checking tools, revealing an understanding of fact-checking as an international practice, locally embedded.

Fact-checking resources are thus not apprehended by the students in our survey in a narrow sense of the term, as we imagined/expected they would, i.e., first, the understanding of fact-checking and verification as a journalistic guideline and, second, the understanding of a tool as an app/software/engine designed to be utilised for this purpose (see definition given by the Credibility Coalition in the CredCatalog). The students' understandings extend beyond this definition. This shows that there is a narrow and broad understanding of fact-checking resources. Whether we use the narrow or broad term, accent is put on fact-checking as a process or as a guideline. Similarly, the expression may cover practices as crowdsourcing or user-flagging, education and research, data collection, etc.

To sum it up, the findings of the survey show that the reference to fact-checking resources entail various meanings. It includes various formats and contents, functionalities and objectives, geographical perimeters and scopes, as well as user participation degrees: Information/data that can be consumed, searched for or analysed to (not only) inform oneself and/or disprove an assertion, but also detect, counter and avoid disinformation within specific contexts and areas.

Discussion: Fact-checking as part of the information literacy

The above-mentioned findings reveal that students in all three universities consider all kinds of anti-disinformation tools as fact-checking resources. Certainly, local educational contexts and national cultures need to be taken into consideration[10]. Indeed, it seems that there are very few explicit policies

[10] This section uses the findings of a survey conducted in the frame of the European Erasmus+ project on Fact-checking, entitled "*European cooperation project on disinformation and fact-checking training. Empowering current and future media and media education professionals, to identify, prevent, and combat fake news spread over digital networks*" (Call 2019 Round 1 KA2, Cooperation for

across the three countries in question (France, Poland, Greece) regarding fact-checking education. If a policy does exist, it is usually seen as part of a media and information literacy education strategy.

More specifically, we know that France was an early adopter of fact-checking in Europe, with the earliest fact-checking organisations, including over 35 fact-checking programs since 2000 (19 were still active as of fall 2019); hence the importance of French fact-checking resources listed by students. In France, fact-checking as a practice consisting in publicising truth was traditionally considered to fall within the jurisdiction of journalists (in French newsrooms, since the 1900s, the verification of information was part of subeditors' missions). However, the disruptive power of fake news seems to progressively establish the need for a more extended definition of fact-checking as a skill for journalists as well as citizens, at the service of human empowerment. Although commonly employed to verify the veracity and accuracy of political declarations, nowadays it mainly designates the verification of information in a more general sense (information literacy and news literacy), especially the one shared within online platforms (Monnier *et al.*, 2021).

In France, fact-checking training seems indeed to be diluted within information and media literacy programs, both for journalists as well as for higher education teachers, librarians, documentalists, etc., although these sectors rarely encounter each other. Fact-checking training seems to focus on "information-checking", "fake-checking" and post-truth, relating to the overall media and democratic crisis of contemporary societies. It seeks to emancipate citizens, especially young ones. Even though newsrooms, such as *Libération* and *Le Monde*, have developed in-house fact-checking units, it seems that not all Schools of Journalism explicitly provide courses on the topic. Of course, this does not mean that the verification of information is not considered to be important by those who design curricula, nor that it is not part of the latter. The verification of information before publication constitutes a major pillar of the journalistic work, which transcends courses and specialisations, and is supposed to be part of the core journalistic ethics and practice. Also, in secondary school curricula, fact-checking is not addressed as such, but is rather incorporated in the more general policy of media and information education, under the auspices of the Ministry of National Education and Youth. It is mostly associated with critical thinking, individual responsibility and emancipation, citizenship and ethics. It concerns information in a general way, focusing among others on the distinction between facts and opinions. It is mainly related to the skills of research, selection and interpretation of information, evaluation of sources and contents.

By contrast, Poland initiated a media education curriculum in 1999, though the latter was irregularly applied, and subsequent governments did not emphasise

innovation and the exchange of good practices, KA203, Strategic Partnerships for higher education, 2019-2022).

it. In the 2018-19 national curriculum, it completely disappeared as a national educational priority and can only be found if certain teachers want to use it. There is still debate about what the media education strategy should be at a national level and outside actors are largely picking up the mantle, such as the Fact-Checking Academy created by Demagog, a leading fact-checking group, with the partnership of the US Embassy. In this context, there is a lack of media education training and tools available to teachers.

In Poland, as in France, there are no separate studies devoted to fact-checking at the university level. Fact-checking is taught as part of other courses in journalism and social communication, and there is no academic textbook written in Polish on teaching fact-checking. Initiatives concerning education in the field are again undertaken by non-governmental or commercial organisations, and associations. These initiatives aim at promoting high-quality journalism and pluralism of information media, as well as developing critical thinking skills and digital media literacy, building public awareness and resistance to disinformation.

Diverting from the French and Polish overall stand, in Greece, public actors (Ministry of Education, Universities) focus on the importance of digital tools in checking the transmission of disinformation. The interest lies in technology, the government pushing to build relevant skills among the youth for economic development. Normative criteria of journalistic quality and a code of ethics are of course taught to every Journalism and Communication Department. The private sector and the NGOs put their attention on debunking fake news (social media bots, false reports, fake claims, etc.), while the civic sector undertakes media literacy-related initiatives in local communities. Consequently, there seems to be confusion between MIL (Media Information Literacy) and information and communication technology education. Finally, while Poland suffers the hardships due to limited press freedoms in its recent past, Greece struggles with consistency in defining a MIL strategy because of the financial repercussions of the debt crisis.

Beyond national contexts, similar conclusions can be drawn when one looks up categorisations of fact-checking tools (usually called as such) on the Internet. The latter are not necessarily limited to "general fact-checking resources", but also include tools and resources for social media, browser plugins/apps for detecting fake news, quizzes/games, tips to keep in mind when fact-checking, evaluation tools (*e.g.* CRAAP test or Mary Ann's FIB test), video tutorials on fact-checking best practices, checklists, worksheet tools, fake fact-checking and fake news sites[11]. Fact-checking and verification are simultaneously or alternatively apprehended as

[11] Examples of fact-checking tools categories online: https://libguides.lakeheadu.ca/c.php?g=699699&p=4967982; https://libguides.doane.edu/c.php?g=854566&p=6119992; https://guides.library.msstate.edu/c.php?g=672253&p=4734158; https://research.library.gsu.edu/c.php?g=621030&p=4423669; https://guides.stlcc.edu/fakenews/factchecking; https://playbook.n-ost.org/research/fact-checking/tools-and-resources; https://www.dw.com/en/fact-checking-a-curated-guide-to-resources-and-ideas/a-54509776; https://library.mentonegirls.vic.edu.au/be-informed/senior-fact-checking; https://credibilitycoalition.org/credcatalog/project/bellingcats-digital-toolkit/

journalistic guidelines, processes that lead to claims/information being checked or verified, processes leading or being of service to the improvement of information quality and the insulation from disinformation problematic effects.

The challenge of mapping fact-checking resources: A proposal

Building upon the results of the above elements, it becomes obvious that any classification or mapping of fact-checking resources needs to take into consideration the broader vision of the truth-seeking process, ranging from its false/true verdict-oriented instruments and platforms, to the wider information literacy competency of which the latter are part of. Similarly, modelling the variety of fact-checking devices should address their ongoing progressive expansion from journalists (as gatekeepers) to common lay users (as informed citizens), by clearly displaying their extensive underlying participation spectrum. The combination of these two scales reveals four distinctive categories of fact-checking resources (see Figure 1) – the term seems more appropriate than "tool", defined in the following way:

– *Fact-checking services*: Associating low lay user participation and false/true-oriented barometers, fact-checking services designate a variety of media sections, directories and/or platforms, mostly online, that provide fact-checks, debunking, etc. They can be for free or require a subscription, and can sometimes incorporate limited lay user engagement, *e.g.*, giving the possibility to citizens to ask questions and request for specific fact-checks. These platforms are mostly handled by journalists.

– *Verification tools:* We will finally reserve this term that we have been using from the beginning of this text to refer to software (apps, programs, plugins, etc.) used to authenticate all forms of information (claims, images, etc.) and/or to verify its accuracy. Verification tools can be for free or on subscription, open-source or proprietary. Even when initially intended for journalists, they are becoming more and more available for lay users, despite the fact that they still require skills that are not necessarily at everyone's reach.

– *Fact-checking aids*: We will classify here low lay user participation resources that seek to transmit knowledge, i.e. information literacy in its broad sense encapsulating: Visual literacy, cultural literacy, media literacy, network literacy, computer literacy, etc. (LeDeuff, 2014). Tutorials, trend charts, etc. can fall within this category. Citizens can use/consume these resources, but they rarely intervene in their fabrication.

– *Fact-checking (educational) environments*: This category refers to a variety of more or less immersive online experiences with educational (information

literacy) purposes revolving around disinformation and fact-checking, necessitating a high degree of lay user participation and engagement (*e.g.* serious games, MOOC, etc.).

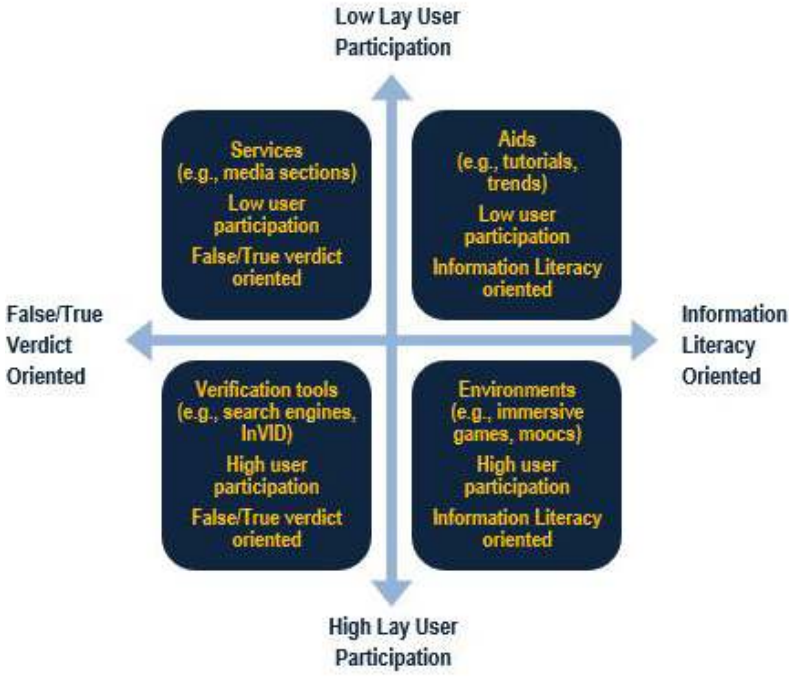

Figure 1. Mapping fact-checking resources (source: CALYPSO EU Project, 2022).

Conclusion

The survey in the frame of this study shows that fact-checking resources are apprehended very broadly and diversely by students in journalism and communication in France, Poland and Greece. Also, we have noticed that policies across these countries regarding fact-checking education are part of more general media and information literacy education strategies. In this way, fact-checking resources encompass various formats and contents, functionalities, and objectives (that go beyond the process of "checking of facts"), geographical perimeters and scopes, as well as user participation degrees.

This study finally suggested a new approach to fact-checking resources by classifying them in four categories (service, aid, verification tool and environment) according to the level of user participation and the functionality of the resource.

This typology helps users make sense of the multiplicity of resources (directly or indirectly) aiming at better informing oneself, detecting, countering and avoiding disinformation within specific contexts and areas.

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