MAPPING FACT-CHECKING RESOURCES.

A TYPOLOGY BASED ON CROSS-NATIONAL INSIGHTS (FRANCE-GREECE-POLAND)

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Summary

This report 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 tools that they use or they are aware of. Findings revealed a common denominator, i.e., the existence of an overall wide acceptation of the meaning of "fact-checking tool", which this report has mapped. However, it also shed light to differences linked to the role of national/cultural contexts.

Key words

Fact-checking, fact-checking resources, fact-checking tools, verification services, information literacy, information disorder.

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Introduction

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 misinformation over the past years has given rise to a large variety of fact-checking tools: Platforms and devices, whose diversity in terms of functions and design (search engines, archives, reverse image/video search, collaborative platforms, websites, media sections, etc.) entail diverse uses; hence the divergent or even confusing understandings of fact-checking tools and processes. Yet, there seems to be a clear gap in what we know about fact-checking tools, 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-check and verification tools tend to be analyzed in terms of effectiveness and performance, values, challenges, automation, crowdsourcing, perception, and involvement, etc. Little has yet been researched on what a fact-checking resource or tool is and how classifications of fact-checking can be operated.

This initiative aspires to contribute to mapping fact-checking resources by establishing a typology of the latter depicting the variety of available tools. Our approach is bottom-up: in the frame of an on-going European project on collaborative fact-checking, we have asked students in journalism and communication studies coming from France, Greece and Poland to list and classify all fact-checking tools 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 acceptation of fact-checking tools. However, it also shed light to differences linked to the role of national/cultural contexts.

In what follows, we will first go through common classifications of fact-checking tools and resources, in order to highlight the already important variety of angles and criteria which usually come into play. This endeavor will also bring us to identify underlying problematics that relate to these classifications, even though they are not explicitly addressed. We will then provide information about the context of our empirical study and the project the latter is related to. We will continue by presenting the findings of the survey which reveal the multiple understandings of fact-checking tools, as crystalized in students' lists and classifications. Finally, we will discuss the discrepancies observed in the findings and try to understand 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 allows to take into account the observed diversity of resources and their uses.

Common classifications of fact-checking tools

Over the last decade, one can notice a significant development in the field of journalistic fact-checking, especially regarding political news, and information on health matters (for instance presidential elections or vaccine safety) which have become a fact-checking domain on their own (see Fabry, 2017). In recent years, fact-checking as a process and a means has gained importance as the influx of information has widened due to the networking character of the Internet. Consequently, countering the worldwide online disinformation phenomenon necessitates a considerable amount of work for fact-checkers, since everybody can be a consumer, creator and disseminator of disinformation. In this way, fact-checking practices are being undertaken not only by media-outlets but also by an increasing number of international organizations, NGO (non-governmental organisations) and/or NPO (non-profit organisation), projects, as well as numerous non-journalists in the social media landscape.

Indeed, besides the variety of fact-checking contributors, the methodologies of fact-checking also diverge. Fact-checking methodology refers to the selection process, research methods and claim evaluations. Fact-checkers commonly put at hand fundamental fact-checking techniques, use credible sources and apply certain standards and codes of principles they commit to when conducting research on claims. 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 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 fact-checking/verification devices and uses is key for journalists, professionals, even for the general audience. As the multi-modal aspect of digital information involves new challenges for fact-checkers, more sophisticated approaches to fact-checking are needed (Nygren et al., 2021, p. 1-3). Yet, there seems to be a clear gap in the literature regarding the notion of fact-checking tools, 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 and Reijnierse, 2020, p. 1286). However, despite this traditional 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., p. 1288).

Beyond this fundamental distinction, literature on the subject has primarily emphasized 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 analyzed 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); user's perception and involvement (e.g. Brandtzaeg et al., 2018; Hassan et al., 2019; Robertson et al., 2020); crowdsourcing (e.g. Allen et al, 2021); or challenges (e.g. Stewart, 2021). Against this background, common classifications of fact-checking tools and methods can be described as follows.

Fact-checking services vs verification tools

A preliminary distinction seems to define fact-checking tools as, on the one hand, *fact-checking services* and, on the other, *verification tools*. Fact-checking services can be used 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, p. 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 "support the process of *authenticating* online content items such as text, images, and videos [...], [hence of] verifying specific pieces of content" (Ibid., p. 1110-1). Verification tools can take the form of search engines, reverse image/video search, metadata extraction, etc. Verification tools usually have a more specialized 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 tools in terms of functions and design entail an array of different uses.

Fact-checking for professionals vs fact-checking for all

Regarding the use of fact-checking tools on the level of the audience, accessibility and ease of use are parameters that impact who can use certain fact-checking tools/services and who can't. Consequently, 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 journalists' collaboration. Additionally, the gap between professionals and the news consumer is further widened by the evolution of the information sources itself (Nygren et al., 2021, p. 1). 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 services/tools – 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 report. 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 empirical study

Our goal in this study was to analyze what potential users consider to be a fact-checking tool. Our research drew upon surveys conducted in France, Greece and Poland, regarding the most widely known fact-checking tools among trainee journalists and other university students in the information-communication field. It was part of the CALYPSO pilot project (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).

The CALYPSO project

CALYPSO is a European cooperation aiming to create a crowdsourcing environment for citizens to combat disinformation by participating in a game for good. The project combines the respective strengths of the general public, journalists, editors, experts, and fact-checkers. The latter collaborate to early detect and fact-check suspected cases of disinformation, exposing disinformation campaigns and messages in real-time, and quickly restoring the truth to minimize the impact of fake news on society.

Disinformation campaigns in this project are understood as defined by the European Commission in the Action Plan against Disinformation[1] "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 is to foster the creation of independent multidisciplinary teams established at national level to increase the capability to detect, analyze, and promptly expose disinformation campaigns, to "bolster resilience against

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[1] https://ec.europa.eu/info/

hybrid threats"[2], and, at the same time, promote news verification training activities targeted to journalists and media literacy campaigns at a national level.

The CALYPSO consortium consists of three internationally recognized universities, with complementary expertise in fact-checking education, a NGO, and five small-scale online media organizations, which are the ones that suffer the most from the lack of news verification resources. 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 of the situation in Europe when it comes to disinformation and the fight against it.

National backgrounds

More particularly, in France, a law against the manipulation of information, which aims to better protect 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.

In Greece, since the beginning of the debt crisis, the media industry faced huge losses in advertising revenues, and as they started cutting costs by laying off employees, the quality of journalistic content in Greece worsened (copy-paste, clickbait etc.) and media distrust was particularly widespread. A public opinion survey conducted across 38 countries by the US-based Pew Research Center (Mitchell et al., 2018) has 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 percent of Greeks believe that their national media are doing a good or somewhat good job of reporting on political issues. This is the lowest percentage among the 38 countries surveyed. On top of the problems caused by the financial crisis, the total absence of news verification education for professional journalists along with the responsible administrative authorities that most of the time look the other way, is indicative of the problem that journalism in Greece faces 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". The CALYPSO project aligns perfectly with the national policies and initiatives to fight disinformation in Greece and envisages to become a reliable ally of the regulatory authority (National Council for Radio and Television) in this battle.

Finally, Poland, has also been hit recent months with several pandemic-related disinformation campaigns, aiming at smearing the country and putting it against the rest of Europe. The phenomenon of the infodemic emerged on an unprecedented scale, fake and manipulated information on Covid-19 having circulated in all forms, on news portals, on social media, on discussion forums and blogs, and via instant messaging (Krawczyk & Mikulski, 2020). As all

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

over Europe, disinformation campaigns threaten to 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). Thus, news verification should be within a journalist's everyday routine.

The survey

Against this background, the first goal of the CALYPSO project was to map existing fact-checking tools along with a critical analysis report of the latter. Within this frame, 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" they knew and put them in categories of their choice. They created their lists individually, a few worked in groups of two. We used the terms "fact-checking tools" in its common acceptance without providing any prior definition. The lists provided by students in France, Greece and Poland assemble a wide range of fact-checking tools, 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.

Findings of the survey: The multiple understandings of 'fact-checking tool'

Students of France, Greece and Poland enumerate multiple fact-checking tools 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, "problematic fact-checking web-sites", i.e., displaying political bias (e.g. *Observatoire du journalisme*) or being openly conspiratorial (e.g. Les DéQodeurs), are also included in the list. The knowledge of fake fact-checking and sites with fake news tendencies is in this case considered a fact-check tool as it can help spot disinformation claims and avoid fraudulent fact-check sites.

In terms of *content*, identified fact-checking tools pertain to news, political claims and "promises" (e.g. Lui Président), conspiratorial beliefs, rumors, 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 web pages (e.g. Wayback Machine, Pema CC), legal texts, academic databases (e.g. PubMed, Google Scholar), etc. Only a few fact-checking websites did treat a specific topic: DecodAgri (about agricultural

practices) and EUvsDisinfo (about pro-Kremlin disinformation), most resources presented do not specialize in a specific topic.

As the examples indicate, the students' lists in all three countries show a wide array of fact-checking tools 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) which are mainly used for marketing purposes. In this case, these tools are 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 evaluations. Some of the tools 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 tools 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 to the fact-check by, for instance, quoting a video's statement for it to be fact-checked, adding sources or comments behind the statements, rating sources quality with votes and get reputation for each vote. A student even makes a category "tools for the users" in which fact-checking methodologies rather than tools are being enumerated and described — for example "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 is something that, provided, everybody possesses and essentially can do by oneself.

A last question is that of the tools' origin and language. All university students not only list fact-checking tools in their respective country, but also count multiple tools 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 tools 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 tools. 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 tools" are not apprehended by the students in the 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 utilized for this purpose (see definition given by the Credibility Coalition in the CredCatalog). Instead, the students' understanding of "fact-checking tools" extends beyond this definition. This shows that there is a narrow and broad understanding of the term "tool". Whether we use the narrow or broad term of "tool", accent is put on fact-checking as a process, as a guideline, as a service or as a network. Similarly, the expression may cover the "human" intervention, the crowdsourcing or user-flagging, the education and research purposes, the data collection, etc.

To sum it up, the findings of the survey show that the term "fact-checking tool" has a broad significance. 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 analyzed to (not only) inform oneself and/or disprove an assertion, but also detect, counter and avoid disinformation within specific contexts and areas. We hence conclude that the term "fact-checking tool" lacks precision and needs further development.

Discussion: Fact-checking as part of information literacy

The above-mentioned findings reveal that students in all three universities consider all kinds of anti-disinformation tools as fact-checking tools. Certainly, local educational contexts and national cultures need to be taken into consideration here[3].

More specifically, we know that France was an early adopter of fact-checking in Europe, with the earliest fact-checking organizations 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 publicizing truth was traditionally considered to fall within the jurisdiction of journalists (in French newsrooms, since the 1900s, the verification of information was part of sub editors' 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 – and especially after 2017 – 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 also seems 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. Fact-checking training is not structured as such, neither in terms of content, levels and learning outcomes, nor in terms of evaluation indicators. At a time when Newsrooms, such as *Libération* and *Le Monde*, develop 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 them. The verification of information before publication constitutes a major pillar of the journalistic work, which transcends courses and specializations, and is supposed to be part of the core journalistic ethics and practice.

Finally, 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

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

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 but it was irregularly applied, and subsequent governments have not emphasized it. In the 2018/2019 national curriculum it has completely disappeared as a national educational priority and can only be found if certain teachers want to use it. This leads to another challenge which is that there is a lack of media education training and tools available to teachers. 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 Poland, as in the case of 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 that would enable teaching fact-checking. Initiatives concerning education in the field of fact-checking are also undertaken by non-governmental organizations, associations, and organizations with a commercial model of functioning. 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) are following an approach that focuses mainly on checking the transmission of disinformation with several digital tools used in the courses. The focus is on technology, the government pushing to build ICT skills among the youth for economic development. Normative criteria of journalistic quality and code of ethics are of course taught to every Journalism and Communication Department. The private sector and the NGOs are focused on debunking fake news (social media bots, false reports, fake claims, etc.). The civic sector mainly focuses on 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 impact to budgets from the debt crisis.

Overall, there are very few explicit policies across the three countries regarding fact-checking education, even within journalism schools. If a policy does exist, it is usually seen as part of a media and information literacy education strategy. Beyond national contexts, similar conclusions can be drawn when one looks up categorizations 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[4]. Fact-checking and verification is simultaneously or alternatively apprehended as journalistic guidelines, processes that lead to claims/information being checked or verified, processes leading or

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[4] 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/

being of service to the improvement of information quality and the insulation from disinformation problematic effects.

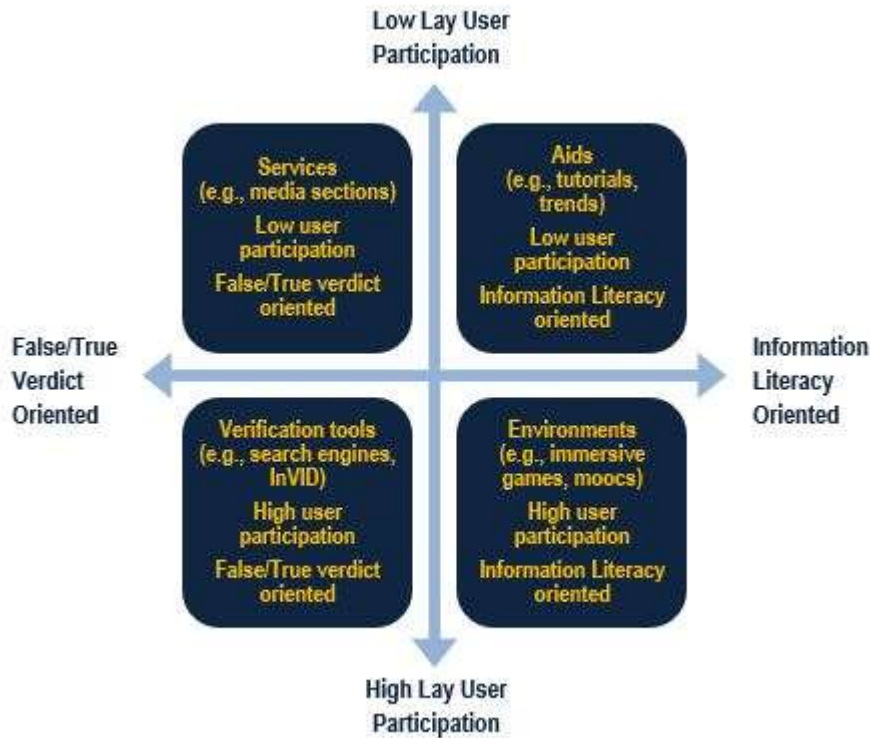# The challenge of mapping fact-checking resources: A proposal

Building upon the results of the above elements, it becomes obvious that any classification or mapping of fact-checking tools 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, modeling the variety of fact-checking devices should address their ongoing progressive expansion from journalists (as gatekeepers) to 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: Authors, 2022, CALYPSO EU Project

Conclusion

The survey in the frame of this study shows that the notion of "fact-checking tool" is apprehended very broadly and diversely by international students in journalism and communication. Also, we have noticed that policies across France, Poland and Greece 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.

We hence concluded that the term "fact-checking tool" lacks precision and needs further development. This report 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 that are aimed (directly or indirectly) to better inform oneself and/or disprove an assertion, and to detect, counter and avoid disinformation within specific contexts and areas.

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