



Mapping Quality Digital Journalism

Research Trends and Pending Challenges in the Age of Hi-Tech

Rubén Rivas-de-Roca^(✉)

University of Seville, Seville, Spain
rrivasderoca@us.es

Abstract. Quality is a priority concept of journalism that connects with the social function of the press. The achievement of quality would ensure a proper work of the media. Technology is driving journalism today; hence, this purpose of excellence requires new common parameters that allow its assessment, especially given the democratic dimension of the sector. Prior scholarship was widely analyzed these issues, but there is neither academic nor professional consensus on how journalistic quality works. Our study aims to examine the main lines of research that have explored quality digital journalism, organizing a fragmented literature into the three schools of theory already recognized by academia in the study of quality: Liberal, Professional and Social Responsibility. Based on a systematic review, we map the research trends regarding topics addressed and theoretical contributions, identifying an increasing number of ethical challenges in the use of digital technologies. This paper suggests to promote a debate on the need of a dialogue between research traditions to deal with the problems of a growing hi-tech journalism.

Keywords: Quality Journalism · Journalism's Standards · Digital Journalism · Journalistic Cultures · Meta-Research

1 Introduction

Quality is a key point for journalism, since this concept implies an ethical dimension that allows journalists to fulfill properly its function in society [1]. There is a political and public demand regarding information quality and, specifically, an ethical-based action from mass media in a time of digital transformation. However, it is not clear which the parameters to define good journalism should be; hence, the media sector itself suffers from a long-standing problem of lack of standards [2].

Ethics is an essential part of quality journalism. From a normative perspective, the liberal model of democracy requires a free press [3]. On this matter, the assessment of the information quality in a particular hi-tech context could work as an indicator of the health of democracy as well as a measure of the journalistic professionalization [4]. The idea of quality does not only refer to news items, but also to social factors that determine journalism [5].

Media scholars have tried to define quality journalism along the time. Although there are many studies on information quality, it is not easy to find a sort of consensus even

in the legacy media [6]. Nevertheless, the literature points to some common parameters to do a good job in terms of journalistic performance. This little shared space can serve as a barrier to problems such as sensationalism or polarization, frequently detected in current journalism [7].

According to Sánchez-Tabernero [8], quality journalism presents a double dimension: professional standards and public perception. In this sense, the measurement of quality through quantitative standards may not match what satisfies the audience expectations. Early studies focused on gatekeeping and news making theories [9], delving into the newsworthiness criteria that make a fact suitable for the media, and also the way in which news are produced.

Another relevant standard of quality journalism are information sources. They are the basis of news items, as most of the time journalists cannot be present on scene. Authors such as Casero Ripollés and López Rabadán states that is possible to set a list of indicators to assess journalistic quality triggering from the use of sources in the news [10]. These standards can be internal and referred to gatekeeping, when they linked to the information production process, or external by resorting to newsmaking and the social effects of information.

The notion of quality comes from the first decades of the 20th century and the US commercial context [11]. Since then, journalistic quality has been addressed following different traditions and contexts. At global level, three research schools stand out: the research in the US with a marked commercial orientation; the one carried out in Central Europe and, especially, Germany, which puts the focus on professionalism; and one third way largely sponsored from Latin America, including issues related to the social responsibility of journalism.

Bearing these facts in mind, the aim of this paper is to offer a review of the state of art of quality digital journalism, trying to organize a fragmented prior scholarship into the schools previously mentioned. The contribution is divided as follows: First, in order to situate our chapter, we provide some background for each of the research schools identified. Then, we summarize the main topics tackled as well as the theoretical contributions, selecting the founding works of each research tradition. Finally, the results are put together to show theoretical gaps, suggesting future lines of research.

The consolidation of digital technologies in journalism did not only alter the news production, but also the values linked to the media sector [12]. Therefore, this study pays attention to the academic analysis of quality journalism in the digital age. The review is intended to spot unresolved questions in the literature [13], knowing the evolution of concepts involved in quality and discussing its applicability to improve the media performance for a well-informed society.

2 Platformized Liberalism or North American School

The Liberal or North American School was pioneer in the study of quality journalism. This school focuses on works on the commercial orientation of the media, with some nuances in recent years. Hence, a good news item is one that gets benefits. This is controversial from an ethical approach, but does not avoid the great international impact of their studies on the US.

According to Moses, the North-American scholars seek to show that quality brings profits to journalistic companies, ranging from a greater audience to prestige. However, they found the problem that there is not agreement on what quality journalism means [14], even more with the breakthrough of digital platforms. The local context is an important fact defining the audience expectations; thus, the authors prefer to discuss about the elements of journalism in order to establish a core principle [15]. These elements should be met as to carry out a properly reporting, which enhances citizens' political knowledge.

Research on the US usually concludes that investment in content ameliorates commercial results with the audience. There would be a direct relationship between quality and income [16]. This finding is usual since 1978, when quantitative studies reveal that higher content quality is linked to the rise of dissemination and market penetration [17].

In the building of the concept of information quality in the US, the guides of information standards developed by CBS, NBC and ABC were a significant contribution. These codes of practices, which are typical of the North American journalistic culture, collect the values and practices most accepted by the sector, such as the plurality of sources or the role of investigative journalism [18].

The aforementioned standards are conceptualized by Dicken-Garcia as the criteria that rule journalistic tasks [19]. They reveal how the information is collected, produced and presented. The system of standards in the US derives from the need of relaunching the discredited North American news programs and thus increase their income. In the mid-20th century, the situation of this type of contents was quite precarious. The CBS-TV News was the first program to develop standards thanks to Edward R. Murrow.

CBS standards have a commercial orientation, defining the political approach of the company and its professional identity. The early success of this formula was remarkable, since the CBS news programs were audience leaders for decades. This moves NBC and ABC to develop standards of a similar nature. Television news became the main journalistic source for the North American society, meanwhile the TV channels created documents that summarized the standards. These texts were not a code of good practice or a list of duties, but an attempt to describe how to dare daily with the journalistic tasks. The standards seem to be far from exhaustive ethical handbooks.

Within the framework of the American tradition, *The Elite Press: Great Newspapers of the World* was published in 1968 [20]. This book is considered one of the first references to the concept of journalistic quality. The scholar J. C. Merrill established in this work a list of the best newspapers through five indicators. Three years later, the proposal was improved in *Media, Messages and Men*, a joint work with R. L. Lowenstein [21]. The new contribution suggested a distinction between internal criteria, such as typography or grammatical correctness, and external evaluation variables, in which the prestige of the media outlet was measured through parameters such as the number of quotes.

Despite the great influence of the Merrill's scheme, some authors such as Borrat [22] were critical of these criteria for their excessive relationship with advertising. Besides that, there was an inaccurate identification between leading newspapers and quality. Gómez Mompert, Gutiérrez Lozano and Palau Sampio [23] appraised that the overcoming these drawbacks took place thanks to Bogart [24], who defined in *Press and Public* 23 quality indicators that could be applied to any newspaper. Bogart's proposal, which

Table 1. The Liberal School (research trends)

Topics addressed	- Economic benefit of quality for media companies - Higher content quality linked to the increase dissemination and market penetration
Theoretical contributions	- TV Information standards - Criteria by rank - Quality indicators from the news production - Quality indicators as a constructed approach from different actors
Main works	- <i>The Elite Press: Great Newspapers of the World</i> (Merrill 1968) - <i>Press and Public: Who Reads What, When, Where, and Why in American Newspapers</i> (Bogart 1989) - <i>The elements of journalism: What news people should know and the public should expect</i> (Kovach & Rosenstiel 2001) - <i>Defining and Measuring Quality Journalism</i> (Lacy & Rosenstiel 2015)

orders the criteria by rank, comes from a detailed study of the North American journalistic market in the 1970s. Some of the points collected were number of reporters, length of the news items or diversity of opinions, among others.

The digital changes experienced in the media system around the world, and specifically in the US, fostered Meyer and Kim [25] to revise the indicators of Bogart in 2003. The new version was the result of a survey of members of the American Society of Newspaper Editors. These authors set five major categories of indicators, based on the five essential parts of news production: ease of use, localism, editorial vigor, news quality and interpretation. Nevertheless, the global trend leads to a homogenization of quality standards, following the North American tradition for the cultural influence of this country.

In recent years, some US foundations have funded studies on how to measure journalism quality in digital platforms [26], putting the focus on content analysis, audience preferences, expert judgments of quality, and indirect indicators approach. As summarized in Table 1, the research on the journalistic quality is largely oriented to a platformized commercial market, but classical studies still shape the analysis of this issue.

3 Hi-Tech Professionalism or Central European School

Regarding the Professional or Central European School, it is mostly based on the huge number of studies carried out in Germany. Although the Scandinavian countries were the first ones concerned for this question in Europe through the concept of “informativeness”, which consists of the space devoted by a media outlet to a group of facts, the influence of the German studies is outstanding. They began in the early 1990s, focusing on the audience, especially with regard to credibility and trust in the media [27].

In 1992, Schatz and Schulz laid the methodological foundations [28], inspired by the classical theories of McQuail in mass communication [29]. Since then, this research

tradition has applied the notion of professionalism to search journalistic quality indicators. More recently, Handstein [30] developed digital quality parameters, triggering also from the model of McQuail: independence, plurality, objectivity, order (building social harmony and solidarity) and media literacy.

Local media are widely studied as topic for quality journalism in Germany [31], which could be explained by the long-standing presence of these outlets in the country. From the perspective on professionalism, Schulz [32] presents journalistic quality as an objective that mainly depends on three conditions: the availability of resources to develop the journalistic work; the legal and institutional framework, which must guarantee communication rights; and the correct adherence of the journalist to the fulfillment of professional standards.

Beyond the approach of Schulz, which deduces the standards from the social norms and the legal system, other authors propose to extract the criteria for the own standards of each media outlet. Besides that, in Germany there are also studies that use interviews with journalists to find out how they understand their work, in addition to content analysis on news diversity [33]. The analysis of the behavior of the audience is also common, but has been further operated in the last decade tackling the digital public sphere [34].

The classic studies of Schatz and Schulz focused on television, but there were also early references to printed media [35]. In contrast to previous authors, in this work about newspapers Rager, Haase and Weber do not derive their proposal of journalistic quality from political and social conventions, but instead resort to the theory of standards, assuming that journalism can establish these standards. This frame overlaps with the political objective of fostering news diversity. On this matter, the variety of topics and opinions in the public speeches is a condition for free expression; therefore, quality journalism should serve to ensure diversity.

Table 2. The Professional School (research trends)

Topics addressed	<ul style="list-style-type: none"> - Quality as a multidimensional concept linked to criteria (independence, pluralism, etc.) - Diversity, professionalism and relevance as the main dimensions of quality
Theoretical contributions	<ul style="list-style-type: none"> - Quality criteria for printed media - Quality dimensions and criteria for Television News (especially German public-service news coverage)
Main works	<ul style="list-style-type: none"> - <i>Qualität von Fernsehprogrammen. Kriterien und Methoden zur Beurteilung von Programmqualität im dualen Fernsehen. Media Perspektiven</i> 11/92 (Schatz & Schulz 1992) - <i>Zeile für Zeile – Qualität in der Zeitung</i> (Rager, Haase & Weber 1994) - <i>Qualität im lokalen Zeitungsjournalismus. Theoretischer Entwurf und empirische Fallstudie</i> (Handstein 2010) - <i>News Quality from the Recipients' Perspective. Journalism Studies</i> 15(6), 821–840 (Urban & Schweiger 2014)

The relevance of the Central European lies in the fact that its authors target issues such as diversity, relevance or well-balanced information even for hi-tech journalism (see Table 2). However, this research tradition has left aside questions regarding social responsibility. To this end, German researchers are developing a broader system of principles and criteria for measuring media quality, although proposals for common indicators at the European level are still necessary [36].

4 Social Responsibility or Latin American School

In the first decades of the 21st century, studies have emerged that analyze journalistic quality starting from the notion of social responsibility attributed to the profession, especially on the Internet. Journalism plays a key role in the building of public opinion, which is a cornerstone for democracy. New research on social responsibility of the media, in both Europe and Latin America, understands journalism as a social practice of democratic political systems. However, the Latin American contribution has been more widely employed, since the Journalistic Added Value (VAP in Spanish) helps to the news coverage of vulnerable groups [37].

Studies on social responsibility, including the VAP, are inspired by gatekeeping and newsmaking theories [38]. These two approaches connect with two background ideas. On the one hand, journalists as a guarantee of truthful information, which is a fundamental right. On the other, news production must follow some criteria of newsworthiness based on public interest and principles such as verification or balance in terms of digital diversity [39].

The Latin American School considers that quality journalism refers not only to the product, but to the whole communication process that explains the news. Specifically, the VAP is defined as the measurement of the ability of the media outlet and the journalist to deliver and, above all, to process information, selecting and prioritizing both what should be newsworthy and the potential sources involved in the fact [40]. The method was initially introduced in 2001 in Argentina, being later expanded and improved.

According to Pellegrini and Mújica [41], in the selection process (gatekeeping) of VAP the indicators point to three areas of work: news selectivity, accessibility and balance. For its part, during the creation stage (newsmaking) another three types of indicators are created for the news: style, content and emphasis. The standards of style correspond to the language proficiency for an adequate shaping of information and also to meet the requirements of digital journalism. Regarding the content indicators, they conceptualize the role of contextualization through three items: the presence or absence of antecedents and consequences of the news, as well as the journalist's observation.

Lastly, the parameters of emphasis allude to the approach taken by the storyteller to present the facts. Their measurement indicators are the core of the information (factual or speculative) and the approach (conflicting, human interest or transcendence). The VAP method makes it possible to cover the study of the journalistic pieces from the moment of selecting facts to the final news item product. This methodology has been validated in multiple studies to evaluate the process of selecting information in Argentina, Colombia, Chile, or Peru.

One of the reasons that explains the interest in social responsibility is the relaxation of standards because of the consolidation of digital technologies. The decrease in quality

Table 3. The Social Responsibility School (research trends)

Topics addressed	<ul style="list-style-type: none"> - Quality journalism goes beyond good news items - Economic, ideological and working conditions that influence on the journalistic performance
Theoretical contributions	<ul style="list-style-type: none"> - Journalistic Added Value (VAP) - Specific criteria for gatekeeping and newsmaking
Main works	<ul style="list-style-type: none"> - VAP: un sistema métrico de la calidad periodística. <i>Cuadernos de Información</i> 14, 112–120 (Alessandri et al. 2001) - <i>Valor agregado periodístico. La apuesta por la calidad de las noticias</i> (Pellegrini et al. 2011) - La calidad de la información periodística: estrategias para su observación. <i>Estudios sobre el Mensaje Periodístico</i> 21, 135–144 (De la Torre & Téramo 2015).

comes from the transformation of newsroom methods towards practices more focused on immediacy. In this context, the Latin American School is proponent of a model in which quality implies digital elements (truthfulness, diversity, coherence, etc.) affected by ideological and economic factors. Table 3 informs us about how the studies on this topic have been structured.

5 Conclusions and Discussion

In this chapter, we explored the main research schools in the analysis of journalistic quality, moving from early studies to the current situation. In a changing digital communication environment, journalists require not only technical training in relation to languages and technologies, but also knowledge to produce quality information. This era can lead to a greater precariousness of journalistic work, uncivil comments or an increase in opinion journalism, entailing at the same time a range of potentialities. Quality journalism continues to be and appreciated value by professionals and users, which cause the desire of integrating them to fulfill the function of the press.

From the US, the market orientation prevails as the purpose of quality; meanwhile, in Germany journalistic quality is associated with diversity or professionalism, meaning that journalists must be committed to their work to achieve accountability. The social dimension is present at some extent in both the US and Central Europe, but it is in Latin America where a whole research school developed on this matter. In this area, the social responsibility has been addressed as a single topic, delving into the role of economic or ideological factors. It is striking the lack of common works between the authors of the identified schools. This finding may overlap with the introduction of hi-tech innovation [42]. Quality is mostly presented as a changing concept that need clear parameters to enhance journalism in times of decline and transformation of the traditional professional culture. Thus, its relevance is founded on a mediation theory.

Despite the above, neither the profession nor the literature has managed to generate common quality standards that determine what is good digital journalism, making a

difference to other sectors. An example are the ISO norms, which operate at the international level to ensure a certain homogeneity in product development and services. The internationalization of social communication and the need to increasing payment for content spurs interest in these issues. Future research should work on cross-national parameters, carrying out a dialogue between different quality traditions to be useful for journalism.

Acknowledgments. This work has been funded by the VI PPIT-US (Research and Transfer Plan of the University of Seville).

References

1. K. McBride, T. Rosenstiel, *The New Ethics of Journalism: Principles for the 21st Century*, CQ Press, 2013.
2. S. Alsius, F. Salgado, *La ética informativa vista por los ciudadanos: contraste de opiniones entre los periodistas y el público*, Editorial UOC, 2010.
3. M. M. Ferree, W. A. Gamson, J. Gerhards, D. Rucht, Four models the public sphere in modern democracies, *Theory and Society* 31(3) (2002), 289–324. DOI: <https://doi.org/10.1023/A:1016284431021>
4. A. Parreño, M. Rabadán, La argumentación de los periodistas sobre la calidad del periodismo, in: J. Gómez Mompert, J. Gutiérrez Lozano, D. Palau-Sampio (Eds.), *La calidad periodística. Teorías, investigaciones y sugerencias profesionales*, Aldea Global, Barcelona, 2013, (pp. 105–119).
5. R. Rivas-de-Roca, M. García-Gordillo, F. J. Caro-González, La construcción del periodismo “localizado” en medios digitales europeos. Estudio de casos, *Revista Latina de Comunicación Social* 75 (2020), 1–26. DOI: <https://doi.org/10.4185/RLCS-2020-1414>
6. A. Aiestarán, A. Agirre, B. Zabalondo, T. Ramírez de la Piscina, La evaluación de la calidad de las noticias en la prensa vasca, en comparación con la prensa europea de referencia, *Estudios sobre el Mensaje Periodístico* 21(1) (2015), 47–62. DOI: https://doi.org/10.5209/rev_ESMP.2015.v21.50653
7. M. Carlson, The Information Politics of Journalism in a Post-Truth Age, *Journalism Studies* 19(13) (2018), 1879–1888. DOI: <https://doi.org/10.1080/1461670X.2018.1494513>
8. A. Sánchez-Tabernero, Los contenidos de los medios de comunicación. Calidad, rentabilidad y competencia, Deusto/Planeta, 2008.
9. L. Gutiérrez Coba, A. Salgado Carmona, J. Gómez-Díaz, Factores asociados a la credibilidad y a la autoridad percibidas (o su influencia social) en los medios de noticias online en Colombia, *Estudios sobre el Mensaje Periodístico* 21(1) (2015), 165–180. DOI: https://doi.org/10.5209/rev_ESMP.2015.v21.50671
10. A. Casero Ripollés, P. López Rabadán, La gestión de las fuentes informativas como criterio de calidad profesional., in: J. Gómez Mompert, J. Gutiérrez Lozano, D. Palau-Sampio (Eds.), *La calidad periodística. Teorías, investigaciones y sugerencias profesionales*, Aldea Global, Barcelona, 2013, (pp. 73–89).
11. J. Gómez Mompert, D. Palau Sampio, in: J. Gómez Mompert, J. Gutiérrez Lozano, D. Palau-Sampio (Eds.), *La calidad periodística. Teorías, investigaciones y sugerencias profesionales*, Aldea Global, Barcelona, 2013, (pp. 17–38).
12. M. Deuze, T. Witschge. Beyond journalism: Theorizing the transformation of journalism, *Journalism* 19(2) (2018), 165–181. DOI: <https://doi.org/10.1177/1464884916688550>

13. L. Codina, *Revisiones bibliográficas sistematizadas: Procedimientos generales y framework para ciencias humanas y sociales*, Universitat Pompeu Fabra, 2018.
14. L. Gutiérrez Coba, Análisis de la calidad informativa, primer paso hacia el cambio, *Palabra Clave* 9(1) (2006), 29–56.
15. B. Kovach, T. Rosenstiel, *The elements of journalism: What news people should know and the public should expect*, Crown Publishers, 2001.
16. E. Thorson, *News Quality and Credibility: Their Relation to Profit and Circulation*, The University of North Carolina at Chapel Hill, 2001.
17. P. J. Anderson, G. Ogola, M. Williams, *The Future of Quality News Journalism: A Cross-Continental Analysis*, Routledge, 2013.
18. J. A. García Avilés, M. Carvajal, *Integrated and Cross-Media Newsroom convergence: two models of multimedia news production: The Cases of Novotécnica and La Verdad Multimedia in Spain*, *Convergence* 14(2) (2008), 223–241. DOI: <https://doi.org/10.1177/1354856507087945>
19. J. García Avilés, *Periodismo de calidad: estándares informativos en la CBS, NBC y ABC*, Ediciones Universidad de Navarra, 1996.
20. J. C. Merrill, *The Elite Press: Great Newspapers of the World*, Pitman Publishing, 1998.
21. J. C. Merrill, R. L. Lowenstein, *Media, Messages, and Men: New Perspectives in Communication*, McKay Co, 1971.
22. H. Borrat, *El periódico: actor político*, Editorial Gustavo Gili SA, 1989.
23. J. Gómez Mompert, J. Gutiérrez Lozano, D. Palau Sampio (Eds.), *La calidad periodística. Teorías, investigaciones y sugerencias profesionales*, Aldea global, 2013.
24. L. Bogart, *Press and Public: Who Reads What, When, Where, and Why in American Newspapers*, Lawrence Erlbaum and Associates, 1989.
25. P. Meyer, K.-H. Kim, *Quantifying Newspaper Quality: I Know It When I See It*, Newspaper Division – Association for Education in Journalism and Mass Communication, 2003.
26. S. Lacy, T. Rosenstiel, *Defining and Measuring Quality Journalism*, Rutgers School of Communication and Information, 2015.
27. C. Schicha, C. Brosda, (Eds.), *Handbuch Medienethik*, VS Verlag für Sozialwissenschaften, 2010.
28. H. Schatz, W. Schulz, *Qualität von Fernsehprogrammen. Kriterien und Methoden zur Beurteilung von Programmqualität im dualen Fernsehen*, *Media Perspektiven* 11/92 (1992).
29. D. McQuail, *McQuails' mass communication theory*, Sage, 1994.
30. H. Handstein, *Qualität im lokalen Zeitungsjournalismus. Theoretischer Entwurf und empirische Fallstudie*, AVM Akademische Verlagsgemeinschaft, 2010.
31. M. Friedrichsen, *Medienzukunft und regionale Zeitungen. Der lokale Raum in der digitalen und mobilen Medienwelt*, Nomos, 2010.
32. W. Schulz, *Preconditions of Journalistic Quality in an Open Society*, International Conference News Media and Politics-Independent Journalism, 2000.
33. K. Otto, M. Degen, M. Olgemöller, A. Köhler, *News Coverage of the Greek Sovereign Debt Crisis in German Public Service Broadcasting: A Case Study Analysis in Tagesschau, Heute, Brennpunkt and ZDF Spezial*, *Journalism Practice* 15(7) (2021), 1012–1032. DOI: <https://doi.org/10.1080/17512786.2020.1760729>
34. J. Urban, W. Schweiger, *News Quality from the Recipients' Perspective*, *Journalism Studies* 15(6) (2014), 821–840. DOI: <https://doi.org/10.1080/1461670X.2013.856670>
35. G. Rager, H. Haase, B. Weber (Eds.), *Zeile für Zeile – Qualität in der Zeitung*, Lit, 1994.
36. M. González-Gorosarri, *Qualitat de les notícies i paritat informativa de protagonistes i fonts*, *Anàlisi: quaderns de comunicació i cultura* 58 (2018), 29–46.
37. R. Rivas-de-Roca, *Ética periodística para una información con perspectiva de género*, *Revista Internacional de Investigación en Comunicación aDResearch ESIC* 22(22) (2020), 82–97.

38. F. Alessandri, C. Edwards, S. Pellegrini, S. Puente, E. Rozas, G. Saavedra, W. Porath, VAP: un sistema métrico de la calidad periodística, *Cuadernos de Información* 14 (2001), 112–120.
39. L. De la Torre, M. T. Téramo, La calidad de la información periodística: estrategias para su observación. Coincidencias y divergencias entre los medios y el público, *Estudios sobre el Mensaje Periodístico* 21 (2015), 135–144.
40. S. Pellegrini, C. Mújica, D. Grassau, S. Puente, W. Porath, Valor agregado periodístico. La apuesta por la calidad de las noticias, Ediciones Pontificia Universidad Católica de Chile, 2011.
41. S. Pellegrini, M. Mújica, Valor Agregado Periodístico (VAP): La Calidad Periodística como un factor productivo en un entorno medial complejo, *Palabra Clave* 9(1) (2006), 11–28.
42. X. López-García, A. Vizoso, Periodismo de alta tecnología: signo de los tiempos digitales del tercer milenio, *Profesional de la información* 30(3) (2021), e300301.

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