

Diffusion and impact of Marshall McLuhan's published work in the Web of Science

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ABSTRACT

This study gauges the scientific impact of Marshall McLuhan's works on academic research. To this end, an analysis was undertaken to study published research that cited his works in the Web of Science (WoS) from 1957 to 2017. A total of 6,591 documents were found that record 8,989 citations from a range of McLuhan's, mainly scientific documents (journal articles and monographs). The temporary distribution of the documents, the citations received by the different types of documents, the subject matter of the papers and the other co-authors cited along with McLuhan were analyzed. Among the main results, it was found that compared to the Canadian researcher's journal articles, his monographs received the most citations received, notably his work entitled "Understanding Media: The Extensions of Man". In addition, it was discovered that the interdisciplinary nature of McLuhan's thought has had repercussions in different fields, such as communication, education, sociology and computer science. Since the second half of the 20th century, McLuhan is a benchmark, together with outstanding sociologists, philosophers and communication theorists such as Theodor Adorno, Pierre Bourdieu and Zygmunt Bauman, among others.

Keywords: Bibliometrics; Scientometric portrait; Citation analysis; Authorship study; Marshall McLuhan.

INTRODUCTION

The year 2017 marked the 50th anniversary of the publication of one of the landmark works of communication studies, *The Medium is the Massage: An Inventory of Effects*¹, by Herbert Marshall McLuhan (Edmonton, 1911-Toronto, 1980). Regarded as one of the great researchers of mass media studies, the Canadian thinker continues to be a leading referent in the research he developed in both this discipline and others such as literature, where he began his academic career. This paper analyzes McLuhan's presence in world-class

¹ The title of the book was 'The Medium is the Massage'. What led McLuhan to make a pun out of his popular thesis 'The medium is the message'? According to Eric McLuhan, one of his sons, it was a printing error:

"Actually, the title was a mistake. When the book came back from the typesetter's, it had on the cover "Massage" as it still does. The title was supposed to have read "The Medium is the Message" but the typesetter had made an error. When Marshall saw the typo he exclaimed, "Leave it alone! It's great, and right on target!"

Now there are four possible readings for the last word of the title, all of them accurate: "Message" and "Mess Age," "Massage" and "Mass Age" (McLuhan n.a.).

This study refers to the book as "*The Medium is the Massage*", following the recommendation of Eric McLuhan.

research. The Canadian researcher was widely regarded, to a greater or lesser extent, as a technological determinist (Logan 2011; Marshall 2004) although he always denied it. His thought went beyond the specific state-of-the-art technology of his time. From a historical perspective, McLuhan reflected on both the technology itself and the type of man produced by the new communication media (Roncallo-Dow 2014).

For McLuhan, the mass media constituted an environment in which people live, develop and relate. Thus, people create these means of communication that would later on shape their perceptions and cognition without their realizing it (McLuhan 2006). For this and other similar postulates, McLuhan is widely held to be the father of Media Ecology, which was formally announced in 1968 by Neil Postman, one of his disciples (Lum 2006). McLuhan and his son Eric invented the term 'Media Ecology' in 1967 and they also described the sort of activity that it was to designate. They communicated both items to Neil Postman in 1968 and he subsequently made it popular.

This research is a bibliometric analysis of works indexed in Web of Science (WoS) Core Collections that cite the Canadian researcher, from the 1950s (when McLuhan began publishing his first works) to September 2017. There is a previous work developed by Trillo-Domínguez and De Moya-Anegón (2008) that studies McLuhan's research career and its impact on the research included in the WoS between 1985 and 1995 (113 publications in total).

BIOGRAPHICAL DESCRIPTION AND RELEVANT WORKS

McLuhan is considered one of the 20th century's most influential thinkers (Logan 2011). In fact, the core principles of his work remain relevant to this day, both in the field of mass media theory and in the humanities (Mitchell 2014). McLuhan was a trailblazer in the field of electronic media research, becoming the forerunner of digital media studies (Islas 2015). He coined the popular concepts and/or aphorisms of the 'global village', 'the medium is the message', or media conceptions like extensions of the human body and the differentiation between 'hot' and 'cold' media, and so forth.

Although McLuhan died in 1980, several decades before the Internet was expanded to homes in much of the world, he had long foreseen its advent as well as that of digital media and, above all, the effects that these new media would have on people. In his biography of McLuhan, Philip Marchand explains how he envisioned the arrival of the smartphone:

He told an audience in New York City shortly after the publication of Understanding Media that there might come a day when we would all have portable computers, about the size of a hearing aid, to help mesh our personal experiences with the experience of the great wired brain of the outer world. What makes this prediction even more amazing is that there were no personal computers at the time, no cell phones and no Internet (i.e. 'the great wired brain of the outer world') (Marchand 1989, p. 170).

McLuhan wrote several fundamental books in the field of Information Sciences, among which are: *The Gutenberg Galaxy: The Making of Typographic Man* (McLuhan 1962); *Understanding Media: The Extensions of Man* (McLuhan 1964); and *The Medium Is the Massage: An Inventory of Effects* (McLuhan and Fiore 1967). In the first of these, he analyses the impact of the alphabet and the printing press on Western civilization in the

context of the first two communicative stages of man: the tribal era and the printing era. His work was highly acclaimed, so much so that it received the Governor-General's Award for Non Fiction, the most prestigious literary award in his native country, Canada (Islas 2014).

In *Understanding Media* (1964), McLuhan leaves the past behind and looks to the future. It is one of his most visionary works, introducing concepts that are still valid today, such as the 'global village', the 'information age', the thesis of 'the medium is the message', as well as anticipating the dawn of the Internet or virtual reality.

In 1967, McLuhan, together with graphic designer Quentin Fiore, published his most popular work: *The Medium Is the Massage*. The incorporation of numerous visual resources that overlap with the text, pages in blank and others printed back to front makes it an experimental book from a formal viewpoint. The work's content expands on his thesis of 'the medium is the message, which he enunciated in *Understanding Media* (1964), as well as other concepts such as the 'global village' or the idea that the media are extensions of man.

In one of his last books, written with his son Eric, titled *Laws of Media* (1988), McLuhan provides a synthesis of all his reflections on the media, and develops his popular tetrad, composed of four questions, for the study of any media or technology: (1) What (physical or psychological school) enhances the medium/technology? (2) What does the medium/technology make obsolete? (3) What does the medium/technology retrieve? And (4) What does the medium/technology reverse (when pushed to extremes)?

By the 1990s, a decade after this death, McLuhan had become a pop philosopher to such an extent that *Wired* magazine anointed him 'the patron saint of the brave new world of technology, art and communication' (Horrocks 2004, p.13). Thanks to his enormous popularity, which led to his being interviewed for *Playboy* magazine in 1969 (Norden 1969) and playing a walk-on role in Woody Allen's film *Annie Hall* (1977), McLuhan helped to disseminate a holistic view of the media outside academic circles (Scolari 2015). Despite his exceptional contribution to communication studies, McLuhan never liked the label 'theoretician' or 'expert' (McLuhan 2008). He said: 'I have no theory, only observations' (Federman and Kerckhove 2003, p. 12).

OBJECTIVES

The purpose of this paper is to study the impact of Marshall McLuhan's writings on works indexed in the WoS between 1957 and 2017. Specifically, the objectives are:

- (a) To study the evolution of the scientific use of McLuhan's works.
- (b) To identify his works with the greatest impact according to the number of citations.
- (c) To analyze the impact of McLuhan's work by scientific fields.
- (d) To study the theoretical context of the works citing McLuhan's work.
- (e) To conduct a thematic analysis (by words) and co-cited authors.

The research questions posed are:

RQ1: How has McLuhan's works diffused to other research disciplines?

RQ2: How has the impact of McLuhan's work described his actual influence on surrounding research activities?

It should be noted that most of the documents under study are non-source documents, i.e., those not indexed in WoS (Butler and Visser 2006) and therefore not usually subject to quantitative analyses, either individually or in the context of the discipline. However, these works can be identified through scientific databases as they are subsequently cited in indexed works. WoS and Scopus have been found to be inconsistent to reliably represent output in the humanities (Nederhof et al. 1989; Sivertsen 2009, 2014) or to undertake studies on monographs. However, these documents can be analyzed indirectly, since they are recorded in the bibliography of WoS works.

MATERIALS AND METHOD

This work is a scientometric portrait, a type of bibliometric study appropriate to analysis the research career of scientists such as Wolfgang Ketterle (Koganuramah et al. 2004) and Ahmed Hassan Zewail (Kademani, Kalyane and Kumar 2001). The authors developed a bibliometric analysis applied to works indexed in Clarivate Analytics' WoS Core Collections that cite the works of Marshall McLuhan, whether indexed in WoS or outside of it (non-source). This study allowed us to observe the impact of McLuhan's works over time and to see which fields he has influenced. In other words, the repercussions of McLuhan's work were studied by analyzing documents (recorded in the Web of Science) that cite his work. This methodology was used to study the encyclicals (Repiso, Ahedo and Montero 2018). The data search for this research was conducted in September 2017.

WoS is an indexing product of scientific documents with multiple databases, including Science Citation Index Expanded (SCIE), Social Science Citation Index (SSCI), Arts & Humanities Citation Index (A&HCI), Book Citation Index (BKCI), Conference Proceedings Citation Index and (CPCI) and Emerging Source Citation Index (ESCI). These six databases are considered the core of the product (hence their name Core Collection) since, except for ESCI, they index the world's most important scientific sources (journals, congresses and book publishing houses). For this reason, this subset is widely used for bibliometric studies. Furthermore, WoS includes a book-related product, Book Citation Index (BKCI), with a clear bias towards the humanities, which is limited to indexing collections of books published by international, mostly Anglo-American (Gorraiz and Purnell 2013), academic publishers (Torres-Salinas et al. 2014). McLuhan's work is not recorded in BKCI because the database was created after the publication of the documents under study.

The methodological process was structured in three main stages (Table 1): the first two correspond to the data collection, and the third to the quantitative and relational data analysis. Two sub-groups were analyzed to identify papers citing McLuhan:

- (a) those papers citing WoS indexed articles written by Marshall McLuhan (44 papers);
- (b) all papers citing Marshall McLuhan's works not indexed in WoS.

To do this, the 'Cited References' option and the name of the Canadian author himself in its two variants ('MacLuhan' and 'McLuhan') were used. This approach also allowed the authors to compile McLuhan's monographs and other works such as interviews or talks.

The bibliometric analysis spanned the years 1957 to September 2017, six decades of analysis (Table 2). The works were downloaded in WoS format and processed with the ISI:EXE program (Leydesdorff 1989) and the social network analysis software Pajek (Batagelj and Mrvar 2002) and VosViewer (Van Eck and Waltman 2010).

Table 1: Methodological Process of Bibliometric Analysis of Marshall McLuhan's Works Cited in the Web of Science

1. Identification of McLuhan's works in WoS and search for works citing him (group 1).
2. Identification of papers citing publications by McLuhan outside WoS (group 2).
3. Analysis of bibliography citing McLuhan (group 1 + group 2): 3.1. Identification of citations of McLuhan's main works (monographs and articles). 3.2. Co-word analysis of bibliography citing McLuhan. 3.3. Co-cited author analysis.

Table 2: Description and Justification of the Analyzed Elements of the Bibliography Citing Marshall McLuhan's Works

Analysis of works citing Marshall McLuhan's works	
Distribution of citations	Trend of works citing McLuhan's body of work in WoS were analyzed between the years 1957 and September 2017. There is a delay of several months before publication of works indexed in WoS; this means that some works published in 2017 are not recorded until 2018. Figure 1.
Analysis of the citations from the monographs	The citations that each one of McLuhan's monographs received in the works indexed WoS were analyzed. In the case of works written in more than one language, the citations pertaining to all the versions were included. To differentiate the monographs from the rest of the works, the official list from Marshall McLuhan's website (https://www.marshallmcluhan.com/bibliography/) was used. Table 3.
Analysis of citations to articles indexed in WoS	The citations that McLuhan's articles indexed in WoS received from papers in turn indexed in WoS were analyzed. Given the large number of works and the small number of citations, it was decided to show only the ten most cited works. Table 4.
Words map	From the studies citing McLuhan's works (6,591 works), a word network was made with VosViewer program (Van Eck and Waltman 2010) using the terms in the titles and the abstracts. Subsequently, the network was analyzed and the terms that occurred most frequently were pruned (on at least 30 occasions) using Pajek (Batagelj and Mrvar 2002). The algorithm developed by Kamada and Kawai (1988) was used for the visualization. The clusters were made with VOS Clustering (Waltman, Van Eck and Noyons 2010). The size of the bubbles uses the vector 'degree' indicating the number of connections of each term. The words maps are used to reveal the hidden cognitive structure in a given field (Ahlgren et al. 2015). Figure 2.
Co-cited authors	The sample of publications citing McLuhan's work was analyzed to identify what other authors had been cited. The top 100 were displayed in a social network created with Pajek and visualized with the Kamada and Kawai's (1988) algorithm. The clusters were made with VOS Clustering (Waltman, Van Eck and Noyons 2010). The size of the bubbles uses the vector 'degree' indicating the number of connections, that is, the number of times that McLuhan was co-cited with some of the other 99 thinkers in the works analyzed. This allowed to see what other authors were more usually cited and, therefore, the intellectual context, in the studies in which McLuhan's works were used. According to Repiso, Torres-Salinas and López-Cózar (2016), 'each academic brings his theoretical and methodological perspective to teaching and research'. Hence, the study of the authors was particularly interesting for understanding the disciplines in which they participate. Figure 3.

FINDINGS

Distribution of Citations

McLuhan's work received 8,989 citations in WoS Core Collection distributed in 6,591 documents from the period under study (1957-2017). Both the works of McLuhan indexed in WoS and external documents, mostly monographs and, to a lesser extent, other works like seminar materials, interviews or talks, were included. The number of citations has continued to rise since the 1950s (Figure 1), albeit with variations. Some 100 citations per year were found between the 1960s and 1990s. At the turn of the 21st century, the number of citations rises to almost 500 in 2016, which logically plummets in 2017, since that year's citations had yet to be recorded.



Figure 1: Distribution by Year of Citations to Marshall McLuhan's Work in the Web of Science

The 8,989 citations that McLuhan's works received in WoS were spread across different studies of numerous thematic categories, as much in social sciences as in the humanities and computer science (Table 3). As for disciplines, information sciences accumulated the greatest number of references to McLuhan, with 863 citations in the communication category, amounting to 1,329 citations if those received in the film, radio and television, and information science library service were also added.

Linguistic and literary studies, divided into various disciplines, also yielded a high number of citations (993 citations). Educational research is another discipline in which McLuhan was most often referenced (550 citations), closely followed by the psychology and psychiatry, which together total 440 citations.

The analysis of citations from McLuhan's monographs showed that three most cited monographs total 6,413 citations (71% of the total citations), clearly surpassing those of the rest (Table 4). His most cited work, *Understanding Media*, received 4,163 citations, followed by *The Gutenberg Galaxy*, with 1,369 citations, and *The Medium is the Massage* (871 citations). *Understanding Media* is cited in 63 percent of the documents. The monographs, though not indexed in WoS, are the most cited type of document in McLuhan's body of work.

Table 3: Distribution of References to Marshall McLuhan by the Web of Science's Discipline Categories

Discipline	Citation	Discipline	Citation	Discipline	Citation
Communication	863	Computer Science Information Systems	125	Engineering Electrical Electronic	49
Education Educational Research	550	Religion	118	Literature African Australian Canadian	46
Humanities Multidisciplinary	477	Literary Reviews	108	Psychology Social	46
Literature	454	Psychology Multidisciplinary	102	Literature German Dutch Scandinavian	45
Sociology	400	Literature Romance	100	Computer Science Cybernetics	42
Social Sciences Interdisciplinary	319	Music	100	Computer Science Software Engineering	42
Information Science Library Science	293	Economics	96	Psychology Experimental	41
Cultural Studies	286	History Philosophy of Science	92	Public Environmental Occupational Health	41
Art	239	Architecture	83	Area Studies	39
Language Linguistics	225	Literary Theory Criticism	77	Computer Science Theory Methods	39
History	208	Social Issues	71	Multidisciplinary Sciences	39
Philosophy	188	Computer Science interdisciplinary	69	Psychology	38
Law	184	Environmental Studies	69	Psychology Psychoanalysis	38
Business	178	Planning Development	69	Urban Studies	38
Film Radio Television	173	Psychiatry	67	Folklore	35
Political Science	164	International Relations	63	Literature British Isles	34
Anthropology	141	Theater	62	Medicine General Internal	33
Management	136	Psychology Clinical	56	Telecommunications	33
Linguistics	129	Ethics	52	Psychology Educational	32
Geography	126	Psychology Applied	52	Other disciplines* (95)	875

* This final category includes all those areas that have recorded fewer than 32 citations.

Similarly, the analysis of McLuhan's articles indexed in WoS (Table 5) showed that the prevailing theme was Information Technologies applied to social change, as was the case with the monographs. It was also interesting to note the low number of citations this set of articles received, which was especially striking given the high number of citations from the books.

Table 4: Number of Citations Received by Marshall McLuhan’s Books in the Web of Science

Title of Monographs	Citation
<i>Understanding Media: The Extensions of Man</i> (1964)	4163
<i>The Gutenberg Galaxy: The Making of Typographic Man</i> (1962)	1379
<i>The Medium Is the Massage: An Inventory of Effects</i> (1967)	871
<i>The Global Village. Transformations in World Life and Media in the 21st Century</i> (1989)	265
<i>The Mechanical Bride. Folklore of Industrial Man</i> (1951)	187
<i>War and Peace in the Global Village</i> (1968)	153
<i>Laws of Media. The New Science</i> (1988)	142
<i>Take today; the Executive as Dropout</i> (1972)	100
<i>Explorations in Communication</i> (1960)	94
<i>Counterblast</i> (1969)	91
<i>Through the Vanishing Point</i> (1968)	68
<i>From Cliché to Archetype</i> (1970)	61
<i>Culture is Our Business</i> (1970)	44
<i>City As Classroom: Understanding Language and Media</i> (1977)	32
<i>Understanding Me: Lectures and Interviews</i> (2004)	30
<i>The Medium and the Light: Reflections on Religion</i> (2003)	22
<i>The Interior Landscape</i> (1969)	21
<i>Media and Formal Cause</i> (2011)	13
<i>Verbi-Voco-Visual Explorations</i> (1967)	12
<i>Report on Project in Understanding New Media</i> (1960)	11
<i>The Classical Trivium: The Place of Thomas Nashe in the Learning of His Time</i> (1942) [Thesis]	9
<i>Seminar on Myth and Media</i> (1976)	1
<i>The Violence of the Media, The Canadian Forum</i> (1976)	0
<i>Misunderstanding the Media’s Laws, Technology and Culture</i> (1976)	0

Table 5: Number of Citations Received for Marshall McLuhan’s Top Ten Articles in the Web of Science

Title of Articles	Citations
Myth and Mass-Media (1959)	14
At moment of Sputnik planet became a global theater in which there are no spectators but only actors (1974)	12
Brain and media - western hemisphere (1978)	11
Effects of the improvements of Communication Media (1960)	11
Alphabet, mother of invention (1977)	10
Argument - causality in electric world (1973)	8
Mcluhans Laws of Media (1979)	6
Laws of Media (1977)	4
Ma Bell minus the Nantucket gam - or the impact of high-speed data-transmission (1981)	3
Pound, Eliot, and the rhetoric of ‘Waste Land’ (1979)	3

Map of Cited Words

Another aspect that allowed the study to delve deeper into McLuhan’s legacy was the analysis of words cited in publications referencing McLuhan (Figure 2). The words most repeated in the titles (size of bubbles) and the summaries of the studies indexed in WoS were referred to. Yet again, a wide multidisciplinary in this map was observed. Three

main thematic categories were identified: (1) media, which draws together all the research on news, social media or cinema; (2) education, encompassing all those works on learning, students, teaching, children and education in general; and (3) culture, with research on art, poetry or music. Aside from these three main categories, there were others of interest, which brought together heterogeneous research related to consumption, the human body, data or writing.

Co-cited Authors

The multidisciplinary nature of McLuhan's thought that was observed in the citations of his works was also reflected in the map of co-cited authors (Figure 3), which lists the 100 most frequently referenced authors in WoS publications, which, in turn, cite McLuhan. In other words, this map showed the other referential figures in the studies in which McLuhan also appears. For example, it was observed that McLuhan's citations often share the limelight with relevant thinkers such as Noam Chomsky, Karl Marx or Pierre Bourdieu.

This study identified five large groups of co-cited authors, either according to their professional relationship with McLuhan (the first two) or, where no relationship existed, by focusing on the main discipline they studied (the last three)²: (1) McLuhan's teachers; (2) McLuhan's disciples; (3) philosophers; (4) sociologists; and (5) psychologists and pedagogues.

As to his teachers, in the field of communication, two of McLuhan's referents were observed – Harold Innis and Eric Havelock – who influenced his reflections on what years later would become known as media ecology.

As far as his disciples are concerned, McLuhan shares a leading role in the publications that cite him with, among others, Henry Jenkins, David Bolter Jay or Neil Postman, all of them theoreticians of Media Ecology.

As for the groups of co-cited authors according to academic disciplines, philosophers form the largest cluster, with thinkers who, although often did devote themselves exclusively to philosophy, stood out mainly in this field, such as Aristotle, Friedrich Nietzsche, Martin Heidegger, Jürgen Habermas, Theodor Adorno, Michel Foucault, Gilles Deleuze and Jacques Derrida.

Sociology was another highly developed discipline among McLuhan's co-authors. Thus, the map shows eminent sociologists from different periods, such as Pierre Bourdieu, Émile Durkheim, Zygmunt Bauman, Anthony Giddens and Erving Goffman. It also included authors in the field of education and/or psychology, such as Sigmund Freud, Paulo Freire and Jean Piaget.

Furthermore, the map shows several authors, namely Manuel Castells, Alvin Toffler or Sherry Turkle, from disciplines like sociology or psychology, who studied communication in the digital context.

² The authors do not intend to conduct an exhaustive classification, since a hundred authors are too numerous to include in the limited confines of this paper. Therefore, a selection that would be sufficient to understand the map as a whole and to show the multidisciplinary nature of McLuhan's thought was included.

DISCUSSION AND CONCLUSION

This paper analyzed the impact of Marshall McLuhan's work on the scientific literature, more specifically, the citations his intellectual output received in articles published in the WoS Core Collection. The study of McLuhan's works is very limited as most of the documents are non-source and therefore not readily available in reference databases to facilitate their direct study. These reasons made it necessary to adopt a different strategy to study their presence in the top-level scientific literature, as explained in the methodological section. Through this analysis, not only the impact of his bibliography was observed, but also its influence on the scientific literature, its development, theoretical contextualization and thematic influence.

McLuhan is still very much present in top-level research in recent decades in general and in recent years in particular, especially in the fields of information sciences. However, when interpreting the trend in the number of citations in WoS, we should bear in mind that it has grown over the years, as has global scientific production. McLuhan published most of his monographs in the 1960s and 1970s, a time when he began to have a significant impact on science. His works published in the 1980s and beyond are posthumous and co-authored, in many cases, because Marshall McLuhan died in 1980. Although his best-selling work was *The Medium is the Massage*, his most widely cited academic work is *Understanding Media*, in which McLuhan first articulates core concepts of the media ecosystem, which went on to have a profound impact on subsequent mass communication theory.

The rest of his works, which surpass 100 citations are: *The Global Village: Transformations in World Life and Media in the 21st Century* (McLuhan and Powers 1989), a posthumous book co-authored with his friend Bruce Powers, which summarizes his main postulates; *The Mechanical Bride: Folklore of Industrial Man* (McLuhan 1951), his first monograph, in which he analyzes the manipulation of public opinion through advertising; *War and Peace in the Global Village* (McLuhan and Fiore 1968), a collage of images and texts re-published with the designer Quentin Fiore, where they illustrate the effects of the new media on people, and *Laws of Media: The New Science* (McLuhan and McLuhan 1988), a posthumous book by him and his son Eric, in which they develop the tetrad to analyze any media or technology.

This paper also highlights the multidisciplinary nature of McLuhan's thought and work. The authors have observed how his postulates feature in research in the fields of education, psychology, literature or computer science. This is borne out by both their number of citations and the words of the works they cite and the academic profiles of the authors most frequently cited alongside him. This finding corroborates the opinion of Robert K. Logan, a media ecology theorist, who defines McLuhan as one of the most influential thinkers of the 20th century (2011).

In McLuhan, the influence that his education, the profile of his teachers and the way his disciples continued and promoted his postulates is remarkable. McLuhan began his academic path in the field of literature with a doctoral degree from University of Cambridge with a thesis on the writer Thomas Nashe, which led him to become a professor of English Literature and Literary Criticism for a number of years (Lozano 2001).

The study of McLuhan's citations in WoS has somehow restricted the findings on all the great masters who had inspired and shaped McLuhan's research. In the field of communication, for example, McLuhan drew inspiration from the works and reflections of

great writers, such as W. B. Yeats, James Joyce, Ezra Pound, Wyndham Lewis and T.S. Eliot, related to human communication and the role of artists in new culture (McLuhan 2015). However, none of them appears prominently cited with him on the Web of Science. However, the authors believe that, beyond these findings, this study can be expanded in various directions. One of them could involve using this methodology to relativize McLuhan's work through the study of other communication researchers. Thus, comparisons could be drawn between authors in order to better assess the impact of the Canadian author in WoS. Another direction could be to investigate McLuhan's impact on the mass media, that is, his presence in news, reports, interviews, films and documentaries around the world. In this way, the academic impact analyzed in this paper would be completed with McLuhan's impact on popular culture through the mass media, to which he devoted so many hours of study throughout his lifetime.

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