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MISINFORMATION: THEORETICAL AND PRACTICAL CONTRIBUTIONS FROM INFORMATION MANAGEMENT AND KNOWLEDGE MANAGEMENT TO HELP FIGHT ONLINE MISINFORMATION

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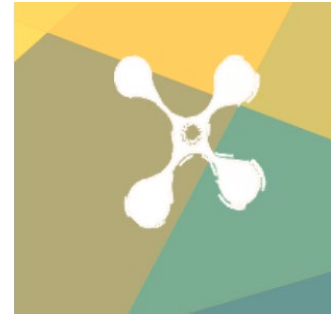School of Information Studies, McGill University, Canada

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DESINFORMAÇÃO: CONTRIBUIÇÕES TEÓRICAS E PRÁTICAS DA GESTÃO DA INFORMAÇÃO E DO CONHECIMENTO PARA AJUDAR A COMBATER A DESINFORMAÇÃO ONLINE

Resumo

Objetivo: Este artigo se concentrará nas contribuições teóricas e práticas da gestão da informação e da gestão do conhecimento para ajudar a identificar e, idealmente, prevenir a criação e disseminação de desinformação online. **Resultados:** A desinformação não é um fenômeno novo, pois a propaganda e as falsas alegações de marketing existem há décadas, senão séculos. O que há de novo hoje é que a desinformação online pode atingir muito mais pessoas em todo o mundo quase instantaneamente, principalmente devido ao uso das mídias sociais. Enquanto no passado apenas pessoas poderosas ou grandes corporações podiam gerar falsas alegações de maneira convincente, hoje a mídia social permite que qualquer pessoa crie e divulgue conteúdo falso. Os riscos são grandes, pois a desinformação pode impactar nas decisões financeiras e de saúde. Houve uma proliferação de notícias falsas em torno da atual pandemia, por exemplo, com algumas buscando lucrar com a venda de curas falsas para a Covid-19, enquanto outras alimentam os movimentos antivacinas. Ao mesmo tempo, as pessoas que podem nos influenciar encolheram para "bolhas de filtro" cada vez mais pequenas, pois interagimos principalmente com pessoas que têm opiniões semelhantes às nossas (Dalkir & Katz, 2020). **Originalidade │ Valor:** A desinformação é um problema social que exige que as pessoas se tornem mais alfabetizadas em informações, que as empresas (em particular, as empresas de mídia social) adotem políticas de informação mais eficazes e que os países adotem legislação que possa abordar a criação intencional e a disseminação de desinformação sem atropelar os direitos dos cidadãos à liberdade de expressão.

Palavra-chave: Desinformação, Fake news, Alfabetização informacional, Prevenção da informação, Modelos de gestão do conhecimento
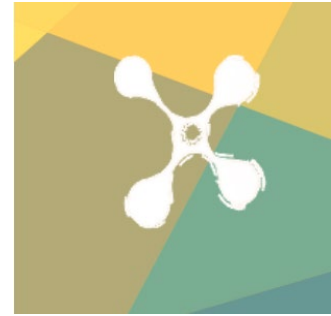
MISINFORMATION: THEORETICAL AND PRACTICAL CONTRIBUTIONS FROM INFORMATION MANAGEMENT AND KNOWLEDGE MANAGEMENT TO HELP FIGHT ONLINE MISINFORMATION

Abstract

Goal: This paper will focus on the theoretical and practical contributions from both information management and knowledge management to help identify, and ideally prevent, the creation and dissemination of online misinformation. **Results:** Misinformation is not a new phenomenon as propaganda and false marketing claims have been around for decades if not centuries. What is new today is that online misinformation can reach so many more people around the world almost instantaneously, primarily due to the use of social media. Whereas in the past only powerful people or major corporations could generate false claims in a convincing manner, today social media lets anyone create and disseminate fake content. The risks are great as misinformation can have an impact on financial and health decisions. There has been a proliferation of fake news around the current pandemic for example, with some seeking to profit by selling fake Covid-19 cures while others add fuel to anti-vaccine movements. At the same time, the people who can influence us, has shrunk to increasingly small "filter bubbles" as we mostly interact with people who hold similar views to our own (Dalkir & Katz, 2020). **Originality│Value:** Misinformation is a societal problem that requires people to become more information literate, companies (in particular, social media companies) to adopt more effective information policies, and countries to adopt legislation that can address intentional creation and spreading of misinformation without trampling on citizens' rights to free speech.

Keywords: Misinformation, Fake News, Information literacy, Information avoidance, Knowledge management models
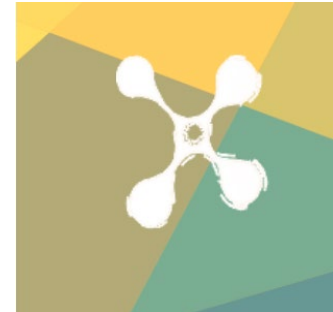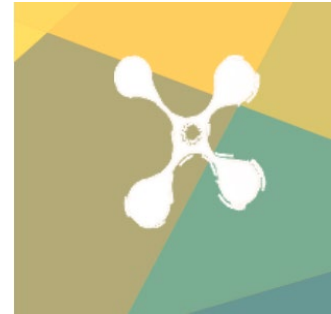
1. Introduction

In a post-truth world, objective facts have less influence on opinions and decisions than emotions and personal beliefs. People deliberately select those facts and data that support their preferred conclusions and classify any information that contradicts their beliefs as "false news" (Keene, 2018). This is not a recent problem but the Internet and social media allow information sharing at an incredible speed (practically real-time) and over a much greater geographic range (almost worldwide). There is also increasingly a crowd-sourcing approach to gathering information. PEW Research notes most people read news through their social networks rather than independent news reports[1]. This creates an overall false balance, as people tend to seek out information that is compatible with their existing views and values.

How can Information Management (IM and Knowledge Management (KM) help in a post-truth world? IM and, more specifically, information behavior models, can help us better understand what types of information seeking people engage in and why they often find and "consume" non-credible sources of misinformation. KM can improve the efficiency and effectiveness of fact checking (e. g. through a news filtering agents that identify false news much as we identify junk email). One example is a new tool introduced by Facebook[2]. KM provides a framework where credibility and trust are critical to sharing information and knowledge with others (Dalkir, 2017). Finally, KM can ensure relevant experiential knowledge as well as validated information is created, shared, disseminated and preserved in order to better inform decision and policy-making.

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[1] Retrieved October 22, 2022, from http://www.pewresearch.org/fact-tank/2017/10/04/key-trends-in-social-and-digital-news-media/

[2] Retrieved October 22, 2022, from https://www.forbes.com/sites/amitchowdhry/2017/03/05/facebook-fake-news-tool/#4ff0edcd7ec1

Educators in general and Information Schools in particular, need to better prepare their students for the post-truth world. They need to revisit the curriculum and revamp how we equip our students with the metaliteracy skills they will need to better navigate the post-truth world.

The methodology is a narrative literature review, which did not use explicit and systematic criteria for the search and retrieval of information about the investigated topic. There was no intention to exhaust the sources of information with exhaustive search parameters. The selection of scientific texts was subjective, considering the author's experience in the presented research object and her previous publications.
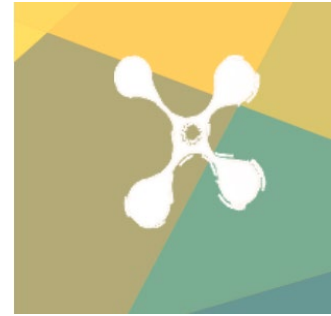
The selected studies were, essentially, epistemological works fundamental to the themes of misinformation, post-truth, fake news, information literacy, knowledge management models, social networks and artificial intelligence, in order to build understanding about the research space. The research proceeded to an in-depth analysis of the selected works, in the qualitative and inductive perspective of selected contents.

2. Results

2. 1. What is post-truth?

2. 1.1. New terminology

In a post-truth world, we are deliberately looking for only specific content that supports what we already believe. The content we want is the content that fits nicely with our opinions, and what we have already concluded. The Oxford dictionary defines post truth as:

- "the public burial of objective facts by an avalanche of media appeals to

- emotion and personal belief[3]."

We are very much prone to this type of "confirmation bias" as we tend to believe, accept and repeat to others those statements that support our already established views. At the same time, we reject or actively avoid any content that directly contradicts our views, even if they are very well supported by evidence (e. g., Enfield, 2007). An example would be someone who believes that childhood vaccination causes autism. They will happily read and share any news supporting this false claim and actively refuse to consume and share any evidence-based content that proves conclusively that this was fraudulent research that was published (and has since been publicly withdrawn from the journal, Science).

There is even a new word to describe the study of post-truth phenomena: "agnotology." This word was chosen as the New Word of the Year the Oxford English Dictionary in 2016. Agnotology is defined as the study of ignorance. It is an antonym of epistemology, which refers to the study of knowledge. Examples include research on why people do not believe in climate change or the link between smoking and lung cancer. Agnotology studies these types of pseudo-academic or pseudo-scientific publications in both the scholarly and general public sectors.

2. 1.2. History of post-truth

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[3] Oxford Dictionary, Retrieved October 30, 2022, from https://en.oxforddictionaries.com/definition/post-truth
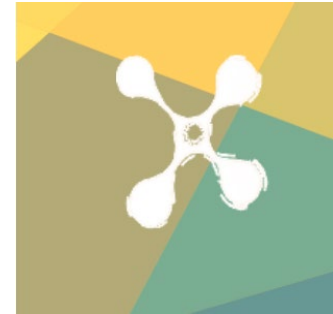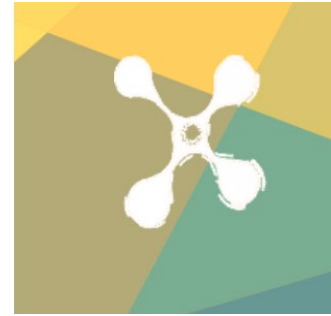
Misinformation has been around forever; probably for as long as humans have been communicating with one another (see Figure 1). Political rhetoric examples can be found in medieval eras with some current work challenging the popular meme of the Emperor Nero fiddling while Rome burned. The advent of radio transmission resulted in radio audio dramas. One of the most famous examples in North America was Orson Well's broadcast of a fictional invasion from space. Only the fictional aspect was not really mentioned, resulting in mass panic. The US 2016 federal elections are the best illustration of the next major development of misinformation: online misinformation. Finally, with the 2020 Covid 19 pandemic, misinformation entered the health sector, with serious consequences on the health decision making.

Figure 1 - A high-level timeline of post-truth.

Source: Adapted from *https://www.bbc. co. uk/bitesize/articles/zwcgn9q.*
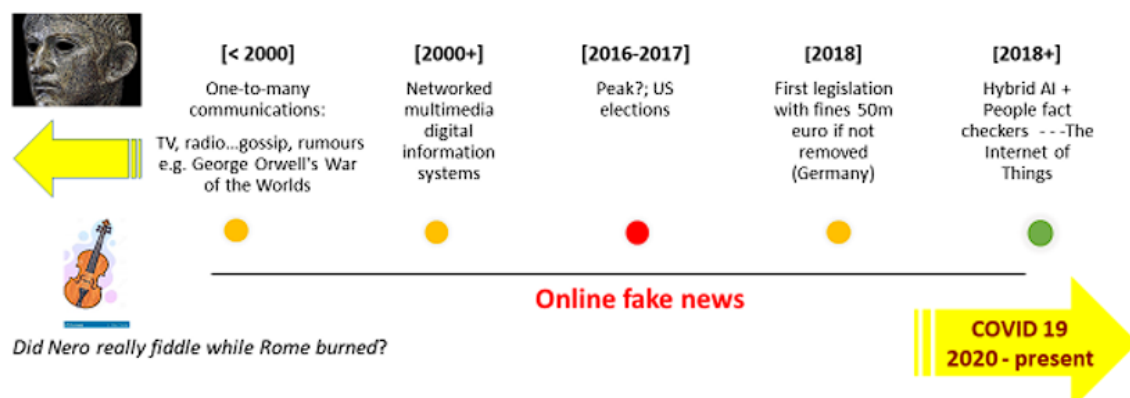
Misinformation is definitely not a new phenomenon but it is particularly challenging in the present day due mostly to the advent of the Internet and social media. The Internet has connected us globally and social media has become a part of our everyday lives. These disruptive innovations have definitely increased the geographic reach (it is
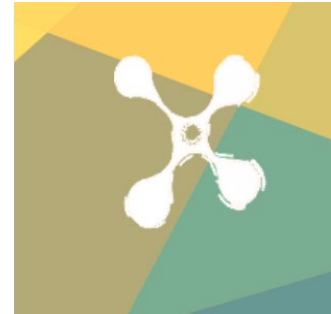
worldwide) and the speed (almost instantaneous) with which we share information, knowledge and news, both valid and less valid content. In addition, artificial intelligence has been leveraged to create and share misinformation in highly effective and efficient ways.

2. 1. 3. Why is the post-truth world different today?

The major reasons why misinformation is such a pressing problem today is due to a number of factors. One is the increase in information overload as there are so many more channels pushing information at us in real time. "We live in a world where there is more and more information and less and less meaning" (Baudrillard, 1994, p.79). There is also the well-known phenomenon in Information Behavior research called "Information Avoidance". This refers to the phenomenon where people are very ready to ignore facts and not accept claims even when faced with very strong evidence. They also lack time to verify everything, so avoidance is a good way of coping with information overload. This combination of information overload with increasing information avoidance while having less time to check on content leads to a prevalence of misinformation with increasingly serious potential consequences.

Another contributing factor is that not only do we have more information channels but we favor ones that are not necessarily the mainstream or traditional sources of content such as news. Crowd-sourced content has taken over and is now the new norm. Most people read news through their social networks not newspapers, newsfeeds or television news. Over 66% from Facebook in US according to Pew Research (2016). This creates a form of "Group Think" where the fastest speed of sharing occurs between close networks of trusted colleagues, family and friends. In addition, the more it is repeated the more it is believed according to an established theory, Repetition Theory, in cognitive

psychology (Hasher et al., 1977). People have more trust in their personal networks so they share the content they receive from them more which in turn leads to more repetition and thus misinformation becomes believed.

The phenomenon of filter bubbles can in fact be applied to all contemporary mediated content. Everyone lives in their own bubble of content created by personalization algorithms of the social media services (artificial intelligence used to recognize your patterns)/ In this way, you only receive content that you would react to favorably or find interesting. The same algorithms used in database marketing to sell you things you are likely to buy. We also create our own social media bubbles and choose to live in them (e. g., Facebook). What is incredible today is the scale of sharing is exponentially greater and the speed of sharing takes only one click or "like". As a result, the value of content is measured by reach (the number of likes) rather than veracity.

## 2.2. The role of information and knowledge management

2.2. 1. Information management

To manage information is to filter it - - better! Information management has traditionally included information literacy efforts to increase awareness and mastery of how to vet information, how to curate information resources and how to check the validity of information sources. However, Knowledge Management (KM) can also contribute to successfully surviving in the post-truth world. One example is drawn from the knowledge processing cycle model developed by McElroy (2003). He notes that KM processes can be used at the individual, group/community and organizational levels to filter, validate, preserve and act upon valid content. Figure 2 shows a high-level summary of the McElroy knowledge processing model. The key elements consist of viewing all
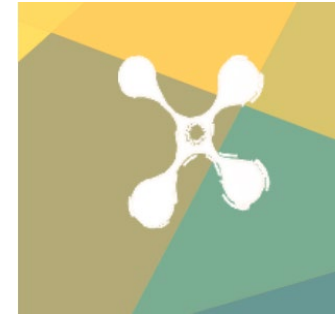
knowledge initially as knowledge claims and/or beliefs. This immediately sets the stage for checking these claims in order to assess the value and validity of each piece of knowledge.

Figure 2 - McElroy KM Process Cycle.
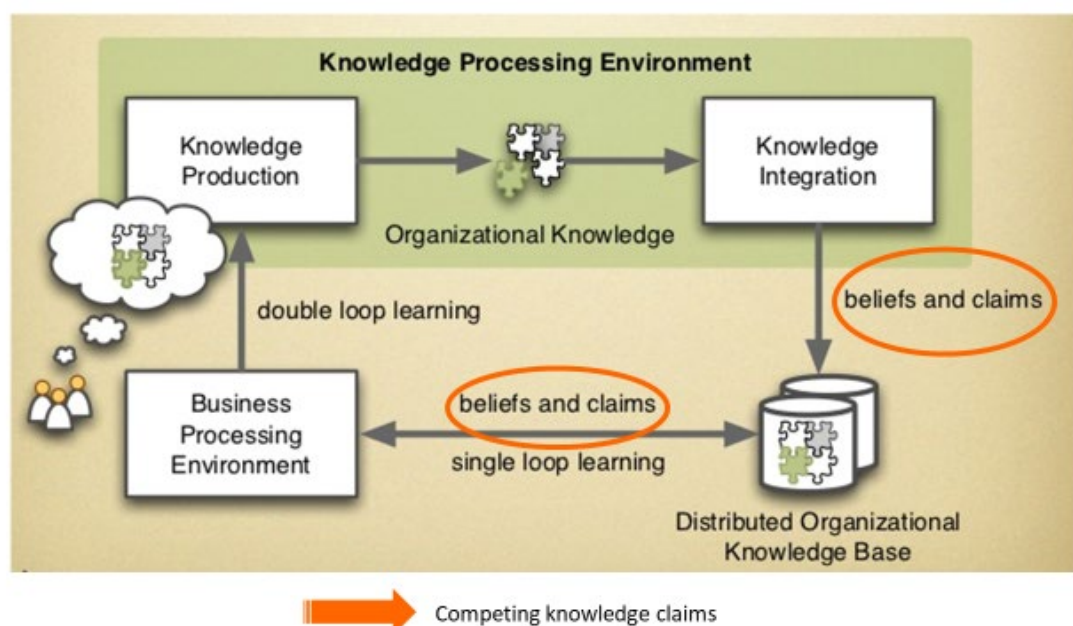
Source: Adapted from Dalkir (2017).

As every item in a knowledge management system starts off as a "knowledge claim" this means that processes will be put into place to validate this knowledge, tag it and recommend whether or not should be used. There is an additional interesting parameter in that a knowledge claim can be proven, disproven or remain unproven (and therefore requiring further investigation).

2. 3. The role of technology
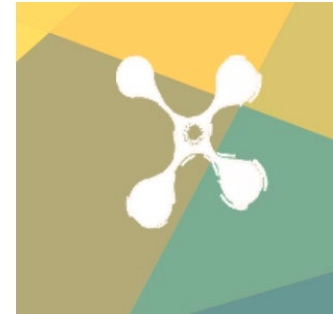
2. 3. 1. Social media

How can social media help? One example from Facebook is the use of third-party fact checkers to verify news stories and flag any ones that are false. As shown in Figure 3, there is also a form of crowd-sourced fact checking in that users can also report fake news by clicking on the post. The latter is a very promising approach as information, knowledge and content exists and is shared by both context and community. Allowing users to flag questionable content for further investigation is an excellent way to increase trust in the social networks (and filter bubbles).

Figure 3 - Example of fake news on Facebook.

Source: Internet.
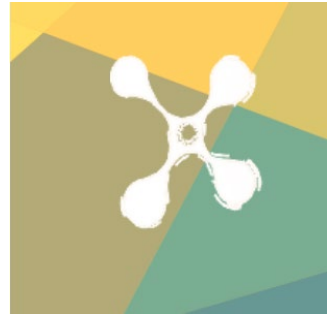
Figure 3b - Reporting fake news.

Source: Facebook.
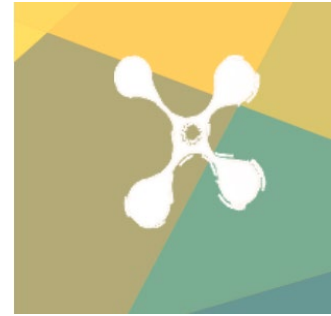
2. 3.2. Artificial Intelligence (AI)

How can AI help? While AI is often cast in the role of the villain as it is being used to create increasingly sophisticated fake content, AI can also be used to help identify misinformation. For example, there is an application that can analyze all online text created by a single author in order to identify who that author is. This was used to identify perpetuators of online fraudulent schemes (Iqbal et al., 2020). AI can help but the best approach is a hybrid one, where AI applications do not operate alone but help knowledgeable people.
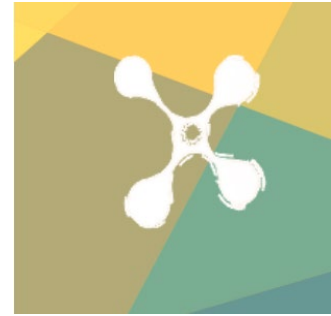
3. Conclusions: key recommendations

There are a number of recommendations to help information consumers (and producers) in a post-truth world. In terms of increasing information literacy, we need to look at the curriculum. Educational institutions as well as professional training will need to go beyond the current approaches to information literacy in order to encompass metaliteracy, or multiple literacies, needed to address misinformation (Mackay & Jacobsen, 2014). Users would need to have a greater awareness of the need to assess the credibility of sources, have the reflex to triangulate (see if at least three different sources report the same content) and acquire critical reasoning skills to better spot fake websites, altered images and videos, misinformation, fake news and fraudulent requests. This content should also be made available and accessible to all (the general public) and not just students. An example is open access to scholarly works such as eMIT OCW (OpenCourseWare) which puts all MIT courses on the web. Online video-rich university courses should eventually be open to all (Kaufmann, 2017).

Information professionals need to play a greater role in helping societies deal with misinformation. They need to transfer their skills to workplaces, to support knowledge workers in all sectors. Information professionals have valuable skills that are often not applied widely enough. They can help users learn how to evaluate the rereliability, accuracy and source of information used in decision making. They can also show how information behavior models and knowledge management process lifecycles can help inform content management for the organization, for communities and even at a personal level.

Our Information School graduates need to be able to make use of hybrid artificial intelligence tools to identify information sources, combat confirmation bias and groupthink. Technologies such as artificial intelligence can help ensure that algorithms are not biased, use pattern recognition to identify fake news, hoaxes and their authors. For example, there are promising new applications such as sentiment analysis which carries out a form of opinion data mining to identify emotional content and emotional reactions (Feldman, 2013). This type of sensationalist content is much more likely to be fake than valid information.

Information professionals need to better market this skill they already have in their toolkits. The Information Schools, especially the iSchools, need to assume more of a leadership role and increase their visibility in the post-truth world.
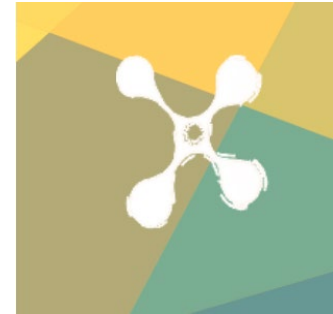
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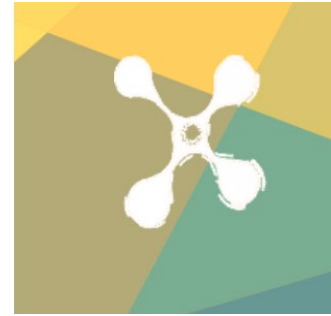
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