

**Humans Vs. Technology: What are the implications of using Artificial Intelligence in media and on society?**



**Sina Summers**

[REDACTED]

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## ABSTRACT

Forms of artificial intelligence - including automated content curation and algorithms that act upon audience analytics - are increasingly determining what information and other media material are being delivered to individual media audience members. The operation and impact of these forms of artificial intelligence are understood in varying degrees by media professionals, editors and other content producers but, literature suggests, are much less understood by - or conscious to - the general public.

This thesis inquiry investigates how algorithms operate generally to affect the dissemination of news information to audiences. This research aims to find what the implications of AI used in these ways are for traditional roles played by media news in public life – such as informing the public in the public’s interests and enabling informed public discourse. This research asks also to what extent the use and effect of AI algorithms are transparent to audiences and how this level of understanding by audiences (or lack of understanding) affects the informing role of media. The thesis produced is comprised of this written exegesis in conjunction with a digitally produced documentary [Changed by Technology](#), which explores the same questions in a format designed for general media (non-scholarly) audiences.

Most of the data and content for both the exegetical-critical component and the creative work-documentary were gathered via qualitative interviews with eight individuals: each interviewee had particular knowledge around different parts of this research question **due to endeavors** in their professional roles working with the public. These include different kinds of publishers, journalism content editors, technical **researchers** and media ethics scholars. Each interview had to serve several functions: as research data for this exegesis, as information for the documentary as it was being produced and as raw audio-visual content for the final digital documentary product. In this way the exegetical and creative research produced new knowledge about the intersection between video-journalism interview methods and the qualitative

interview inquiry methods used for academic scholarly research. This was not the *focus* of my research question; however, because documentary making was my central inquiry method and framed my interview approaches, this intersection of methods and purpose was explored.

The overarching research exegesis discussion at the end of my inquiry identifies ethical and public discourse problems created by a lack of transparency around AI's operation in news information dissemination – and suggests where further research (and public education) on the topic is needed.

## **INTRODUCTION**

“Algorithms” driving decision-making by artificial intelligence are increasingly being used for the collection and storage of data, as well as for their capability to decipher topics of interest followed by media users and to match those individual's interests to a variety of businesses. In short, this means that media companies can use their collected data to reach a targeted audience, Agrawal (2016).

There is a lot of discussion among various organizations about this new technology and their benefits from an information perspective, however, while media organizations are focusing on the use of Artificial Intelligence systems for commercial reasons, society may not be aware of how this can impact on our democracy, or how algorithms can affect our worldview.

There are an increasing amount of legal and ethical issues, such as, the implications for human journalistic employment, concerns around news quality, transparency, and accountability, Thurman (2017), and who decides what is considered valuable news for public knowledge – an algorithm that gathers information from audiences or a human?

I chose to research this topic as I began to see some of the effects that algorithms and automation are having on social media platforms. For

example, every time I clicked a like button on Facebook or searched for information on Google, the algorithms would collect my data and before long I would be receiving numerous marketing posts for products that linked to my interests. This started a process whereby the algorithms were dictating what information was being sent to me. I realized how powerful these robotic systems are and this led me to my research question, “What are the implications of using Artificial Intelligence in media?”

My interest peaked when I discovered that many traditional media organizations are also using algorithms and this made me think about how they are changing the communication of news? Is the information based on reliable sources? And furthermore, is it allowing for multiple viewpoints on topics of value to society?

## **METHODOLOGY**

To understand the science behind AI systems, I attended two conferences held in Melbourne in 2017, which showcased some innovative new technologies. Data 61, a group at CSIRO who specialise in Artificial Intelligence technology hosted the first one, and the second one was the International Joint Conference on Artificial Intelligence (IJCAI), which focused on the impacts of AI on society. Many international speakers talked about different aspects of AI, which provided a variety of perspectives and furthered my understanding of some of the current issues as well as the latest in AI technology.

This gave me an opportunity to speak with scientists, AI engineers and many other experts in this field. This approach offers great potential to attend to the complexity of a story in need of contextualization, Galletta (2013 p. 9). I met Ben Mashford, an AI Research Scientist, at one of the conferences and we discussed the function of algorithms and their capacity to gather information about people. He explains that the Deep Learning method is more commonly used for sentiment analysis, whereby the algorithm understands the sentiment in a body of text as to whether it is negative or positive. In a following

interview, (Mashford 2017), speculates on the future use of algorithms and suggests there is, “a need for an ethical approach to using AI, such as educating people about what algorithms can do and what they are used for”.

There are many new technologies and AI inventions already being used in a variety of fields, and yet, it struck me that there were no representatives at either conference from the media Industry. I wondered why, when traditional media company’s role responsibility is to provide important news to society, and society relies on such news for information on current affairs. The media Industry is undergoing extreme changes and the main disrupter is the use of new technologies. Acknowledging that media companies are already working with AI, this led me to a secondary question, “How can we guide our relationship with Artificial Intelligence in a way that meets the needs of a human society?”

This is when I decided to conduct individual interviews in a qualitative study, as an integral component of my research. This reflexivity was the basis for my decision to film the interviews for a documentary, so that audiences could not only access information about what the usage of AI in media means to news organizations, but also to gain some insights into what it means to everyday people. As a way to build an understanding based on what I noticed and heard, Creswell (2014 p.29), this method matches my experience as a radio journalist and offers the same opportunity to learn from human knowledge and understanding. With further work to produce a television broadcast of this documentary for a wider audience, this will promote the opportunity to raise awareness and encourage on going discussions and public debate on this topic.

This idea was confirmed when I attended a third conference held in Melbourne in 2018, on filmmaking. The Australian International Documentary Conference (AIDC), provided opportunities to talk with decision-makers in the Industry from Australia and around the world, about what topics are currently sought for documentary screening. I received some valuable feedback from interested Commissioning editors, demonstrating that publics want to be

informed about how technology is changing the status quo, and how this is happening, as well as ultimately what it all means to society. The documentary based on the findings of this research, provides some insights and understanding to audiences and contributes to further research in this area.

My approach to an unscripted interview process was to unearth what people are currently aware of, both factually and conceptually. Speaking to people individually meant that I could ask specific open-ended questions in a semi-structured interview that could address the main question. Individual interviews allow one person telling a story without being interrupted, Leavy (1975 p. 289), and this methodology is well suited for a complex topic whereby people need the time to consider their responses without interference from other participants.

Because I had researched some of the scientific aspects of this topic before I spoke with participants, I was able to frame the open-ended questions according to my understanding of algorithms and AI systems. Engaging in conversation with each participant as an equally interested member of society built rapport between us, enabling interviewees to elaborate on a point, based on a phenomenon that needs to be explored and understood, Creswell (2014).

During the filming of the interviews, in which the cameraman and myself were the only other people present with each participant, some indicated that they felt more comfortable when they were not facing the camera. So we adjusted the camera to film them from the side instead. This allowed for a more robust interview where interviewees relaxed into the conversation with ease. As I had spoken to them all at length prior to each interview, we had built a rapport between us and the participants were clear about the topic and the particular questions that they would be asked.

By filming the interviews, using a set of journalistic questions grounded in the social sciences, I was able to observe how people perceive this catastrophic

phenomenon driven by AI, based on their individual experiences. As Galletta (2013 p.18), suggests, this is the particular strength of qualitative research as it offers a fundamental approach that accentuates an ongoing pursuit of meaning. As a Social Scientist, I wanted to understand how people perceive the current changes in media, both specifically and generally. In this sense the study of Phenomenology, (Stanford Encyclopedia 2013), frames this approach to determining who is conscious of their experience and how they see it. The documentary, iterative of a human perspective on this topic, counterweighs a greater trend towards a focus on Artificial Intelligence technology.

In a conversational style, As Leavy (1975 p. 277), suggests, the human world is depicted as a conversational reality in which interviewing takes a central position as a research method. I conducted eight extended interviews covering aspects such as, legal and ethical issues concerning data privacy, as well as personal and professional perspectives. I chose participants who were from a variety of professions, encouraging them to talk about their particular field of interest so that they could provide different points of view on this topic.

Steve Meyers, a media producer and presenter embraces new technologies, although emphasized, (Meyers 2017, October 21), “the human element in communication is important”. Andrew Rennie, Editor-in-Chief at News Ltd, spoke openly about how the media Industry has changed and identified some of the current challenges they face. Describing a complex situation, (Rennie 2017), describes the benefits of using algorithms as well as the concerns he has for the future of news media. This paradoxical situation was the basis for an in depth interview that provides a sound understanding, both from a journalistic point of view and a business perspective.

I wondered about some of the legal implications that are emerging with the use of AI, so I sought some information from a lawyer in the area of media and technology. Dan Pearce has for some time worked in this particular area of law and (Pearce 2017) shared many valuable points pertaining to the far



reaching rights that media organizations maintain, in relation to data privacy for example, and also how members of the public are affected in comparison.

In addition to this, I approached Dr Edward Spence, an ethicist and senior University lecturer, to talk about the ethical implications on this topic. With a focus on media ethics and how they provide a basis for media practice, (Spence 2017), highlighted that, “algorithms can be a problem when they are used indiscriminately, because they can create misinformation”.

The main research question implicitly relates to legal and ethical perspectives, although I also wanted to explore the explicit viewpoints to bring awareness to further implications that may otherwise be overlooked. Integral to this research project is to gain perspectives from those outside of the media Industry to give an unbiased and neutral stand on the subject matter. So, I invited Ian Summers, an Auto engineer and avid follower of news, to speculate on what he thought about the use of AI in news content creation. I asked him how he would feel if an algorithm wrote a news story rather than a human? He thought about this before he responded, and then I noticed he delved into his feelings, expressing his own emotions as he responded, “Humans give a story life. I don’t think robots can replicate human emotion”, (Summers 2017).

I also invited Cathy Alexander, a book editor and consumer of news. She gave a heart-felt perspective on this topic sharing her concerns about the potential for harmful effects on a vulnerable society, emphasizing that; “we need the steersmanship that ethics provide” (Summers, 2017).

I finally sought a wider perspective to encapsulate any further implications. Paul Higgins, a futurist and consultant had spoken to a media group prior to my investigations and was referred to me by a colleague. His ability to see the big picture on this topic was a valuable contribution to my research. Identifying the connection between media and politics, (Higgins 2017), explains how algorithms can be used to form public opinion and to manipulate votes in election campaigns, stating, “an algorithm naturally inherits the biases of the

people that create them, either as an unintended consequence or deliberately”.

## **ANALYSIS**

Today, the use of social media platforms, although originally intended for social exchange, has become a popular choice for people searching for news content. For example, in the United States, the percentage of people using social media as a source of news has increased to forty six percent – almost doubling since 2013, Newman (2016). While, one-third of young people aged 18-24, acknowledged that they sought information on social media during the general elections in the United Kingdom, and this was influential in how they voted, Wallis. J, (2015), demonstrating that new media is reshaping patterns of news consumption and public discourse.

The popular social media site, Facebook, has shaken up the media industry to the point where news organizations are forced to change and adapt by using new technologies, so that they can compete with their biggest competitor.

The fact is, algorithms can generate information faster than humans and for less cost to media organizations, than if they were to employ people to achieve the same outcomes. Algorithms allow them to access specific data, such as, key areas of interest, ages, demographics, gender and many other key indicators that inform media companies who their targeted audiences are.

However, while the benefits to news organizations take priority over the risks, what do the public gain from these changes? In a survey conducted by Reuters Institute for the study of Journalism, it states that, “young people are more comfortable with algorithms than with editors”, Newman (2016). At a time when trust is sought highly there is a risk of being manipulated by the influence of algorithms that have biases.

For example, a recent investigation uncovered a massive data breach by a global organization that literally harvested information from millions of

Facebook users' accessing their profiles, without their knowledge or consent. The organization named, Cambridge Analytica, designed software for the specific purpose of predicting and influencing voters' decisions during the 2016 presidential election campaign of the United States, Munro (2018).

In circumstances where the public is unknowingly influenced by algorithms, democracy ceases to function, as does journalism, Iorio, (2011). If the information that these powerful robotic systems retrieve is heavily weighted by a populist slant, then this can shape the type of news content that audiences are exposed to, and if journalists are unable to publish specific news stories that offer alternative information to the pool of common interests, how will the public receive a balanced perspective of current affairs? Spence (2011), stated, "information respects facts, opinions often do not", although how can people contribute to public debate, if they do not have all the information to base their opinions on?

In addition to this, millions of Internet users are vulnerable to exploitation of their personal data. This issue is reiterated further when discovering that there are currently more rights given to the media organizations collecting the information, than to an individual member of the public, Pearce (2018). It can be argued that if news organizations do not inform the public that they are collecting their data, and for what purpose, this is a violation of moral responsibility. Although perhaps when the focus is on commercial gain, the potential impacts on society can be hidden 'behind the veil of ignorance', Rawls, (2014), and ethical decision-making can be minimal at best.

Algorithms and automation determine a large part of the media process and new situations constantly demand critical decision-making. As Rennie (2018), explains, "These peaks and troughs now are so quick. It used to be, you try something and you might find it could take you two years to understand how it's working", highlighting how fast the media Industry is changing and the implications this has on business practice.

Thomas Hobbes and his famous 'social contract theory', Stanford Encyclopedia (Revised 2014), was introduced at a time when there were no rules in society, nor any common principles or standards. Consequentially, there was minimal trust. Fortunately, today we do have some established laws in AI practice and a media code of ethics, although there are similarities in today's times as we endure catastrophic change in media communications with minimal guidelines that benefit society as a whole.

The Australian Media Code of Ethics, (2017), states however, to never exploit a person's vulnerability or ignorance of media practice. The moral ethics in these circumstances may for instance be subtly hidden by the fact that the changes caused by this phenomenon continue without conscious awareness of their impacts. The Utilitarianism approach, Stanford Encyclopedia (2014), whereby the generally held view that morally right action is for the greatest good for all concerned, holds merit here.

### **Uncertainty**

All stakeholders in this research project reflected on an uncertain future and the unknown aspects, which are often synonymous at a time of significant change. Speaking from different perspectives, (Summers 2017), wondered if one day, we wouldn't know if the information in news is coming from a robot or a human? While (Higgins 2017), expressed some concerns as to whether human capacity is being pushed too far. While there appears to be an acceptance that Artificial Intelligence is an integral component to media communications, there is also uncertainty of how these new information systems are affecting people. This kind of introspection reveals a lack of knowledge as to how humans will cope in an uncertain future, Stanford Encyclopedia (2005 4.2), relying instead on our perceptual experiences to provide us with some understanding.

As the search for factual information is sought, confusion builds in a fractured society as some embrace new technologies, while others are unsure of their capabilities. We, the public, as (Spence 2017), says, "are not always in a

position to tell whether news stories are truthful”, demonstrating a cautionary response when deciding who can be trusted in media sources.

As (Rennie 2017), reflects on his own long-term career in the print media industry of over twenty years, he speaks candidly about the current situation, “I have concerns for the future of the industry, because it’s changed so much”. As he thought about the state of flux that is causing major disruption to media business practice, he makes a statement that implies a long road ahead in the ever challenging task of continuous development, “we’ll always be in a perpetual transition stage, (Rennie 2017). I noted that Rennie attempted to maintain a positive approach towards a relatively unknown future, although I suspect this masked an underlying concern for a never-ending situation that requires constant restructuring of business models.

By drawing out these points throughout the interview, the direction and depth of this research topic was enhanced, Galletta (2013). As Rennie articulated each aspect on the topic, it was as if the high’s and low’s of using AI were like a graph indicating a rocky road ahead. He explained how the business of providing news to an untrusting public, referring to ‘Fake news’, is only part of the challenge. Facebook is their biggest competitor taking their content, their readers and their advertisers.

The pressure to out perform the largest social media company in the world is evident in the way he oscillates between the positive and negative influences that Facebook has on traditional media organizations. On the one hand, he embraces the situation saying, “it allows us to create digital letterboxes to deliver content into, and this is great because our news reaches more people, but on the other hand, we’re battling with them because they have a lot of things that we want”, (Rennie 2017).

Being in juxtaposition with AI is not a smooth road for news providers and yet there was never a moment when he questioned whether algorithms should not be implemented into media practice. It is an irreversible truth that AI is now an established part of media practice. However, as powerful as these

new technologies are, describing the constant state of adversity that is challenging news organizations today paints a picture that is filled with paradoxical scenarios.

### **Contradictions**

The use of AI in media is creating many contradictions, for example, media is essentially an advocate for people who don't have a voice, giving people the opportunity to be heard and to contribute to public debate. Social media platforms have certainly given this opportunity to people all over the world. However, as (Rennie 2017) identifies, from a traditional media view point that, "if algorithms continually gather information pertaining to the interests of their readers, they risk limiting news content to a populist viewpoint".

This was exacerbated by (Spence 2017) who mentioned the implications of people confirming what they already believe, and (Higgins 2017), stating that using that information to harden the views that people already have, can be used to convince people for political gain. These examples are in direct contrast to the original experience of liberation when discovering the possibilities communicating information across multiple sites, (Pearce 2017), questions the validity of such information and whether it comes from a reliable source or not? He continues on this point by suggesting that this can be problematic for the public when reaching decisions about important information.

Furthermore, as the demand to know more information about people increases, a gradual awareness is simultaneously increasing about the need to protect personal data from potential exploitation.

### **The human perspective**

What stood out in all the interviews was that each participant spoke from a humanistic perspective. As integral members of the public, they all shared their concerns for the human race as well as what they value and require, in order to feel connected in a human society. Many stated that they still want a human element in the communication of news and a need for the expression

of human emotion in news stories, while others thought that humans are in a particularly vulnerable situation, as Artificial Intelligence is used more and more in media. As (Alexander 2017), says, this is where, “ignorance will let us down”.

As we confront this new situation, while technology progresses at a rapid pace, humans are beginning to question all that is presented to us as a fait – accompli. In the main, participants indicated that they prefer that media organizations maintain moral and ethical practices, and this perhaps reflects a human desire to be acknowledged and respected as valuable citizens.

As Spence (2011), explains, ethical conduct pertains to matters concerning morality, both private and public and also personally and professionally. I observed the participants during their interviews and noted their unwillingness to back down from a basic human instinct to survive in a rising sea of information, and I ponder whether we should accept anything less than the equality and dignity of our own humanity?

### **Accuracy**

In terms of accuracy, algorithms operate through the collection of information from various sources, and there are some that are questionable. Biases and incorrect data can be collected in the pool of information harvested by algorithmic systems, causing misinformation and potential damage to the reputation of individuals and also to media business brands. As (Pearce 2017), tells us, “ it’s much easier now days for people to defame someone”, bringing any citizen into disrepute over the publication of inaccurate information.

Another example in a business situation, where the well established film company, Netflix, was wrongly reported stating that, “the company missed expectations and that the share price had fallen by seventy-one percent since the beginning of the year when, in fact it had more than doubled during that period”, Graefe (2016). This highlights the need for editorial monitoring to ensure information is correct. The reason behind this error was that the

algorithm couldn't detect unusual events and consequently failed to realise that Netflix stock underwent a seven-to-one split.

Many media organizations are not in favour of providing a human to conduct the crucial task of checking without a clear value proposition in this exercise for them. The cost of human employment versus the capabilities of Artificial Intelligence systems, simply put, is a financial comparison.

### **Trust**

Perhaps the cost of their business reputation however, would be a valuable consideration when weighing up the advantages of ensuring accuracy and quality of news content. For traditional media organizations to gain credibility, trust is critical. Schiffrin et al, (2017). These objectives however, are not necessarily the only value proposition, as prioritising human and social effects alongside economic gain could strengthen public trust in a media brand.

Responsibility for providing accurate information aligns with the Australian Media Code of Ethics (2017), which states, 'Do not allow advertising or other commercial considerations to undermine accuracy, fairness or independence'. Ethics may have evolved over two thousand years, however these foundational values still hold true today even if circumstances have changed. Even though at this time trust (in news organizations) is low, people around the world maintain a desire for unbiased news and believe that factual news plays an important role in the public sphere, Santa-Wood (2018). This directly impacts on our understanding of important situations – not just what we see and learn, but also how we feel and act.

As demonstrated in the United States presidential election campaign in 2016, millions of people sought information and up to date news through Facebook and this revealed some misleading and 'Fake news', confusing publics on what to believe. This influenced public discourse and political outcomes, a critical situation based on published misinformation to the public.



The establishment of democracy as a system of Government, Democracy (2004), states that, a political process of voting for a Governing party should be conducted through free and fair elections, and yet the outcome of the 2016 American election campaign remains controversial. This has caused mistrust and people's perception of news providers are currently under scrutiny as continuing trends of misinformation are generated through automated systems.

This perhaps emphasises what Brey (2012), pointed out about the challenges of anticipating ethical issues while new technology is emerging. Often the best approaches become clear after mistakes are made and new learning is acquired, although, this method of learning has the potential for catastrophic effects on society. As Rennie (2018), states, "If we've angered a community for something that we've done, it takes a long time to win that trust back. We are in such a competitive environment; people have got to trust their news sources". Context can make conflicting demands on individuals, making it very hard for decision-makers in media organizations to reach a decision about how best to act, Spence et al (2011, p.203), particularly when maintaining the survival of their business takes precedence. The collateral damage however, can often reflect a loss of trust in a brand because of unintentional ethical lapses.

### **Media Employment**

Social media platforms, such as Facebook and Google have had a global impact on news organizations, and this is evident by the fact that many news organizations have had major cuts on employment. These changes have introduced the need for new journalistic skills. (Rennie 2017), explains, "I don't necessarily want someone who can write a story, I want somebody who can understand algorithms", a new approach to employment criteria, which is in direct contrast to seeking strong traditional journalistic skills. Rennie speaks about this from a business understanding, accepting the fact that AI has changed the communication of news and in particular, the role of journalism.

Information is a kind of knowledge and social media sites, such as Facebook and Google are accessible 24/7. As these online Internet platforms are the main competitors against traditional media companies, the need for news providers to offer immediate and current information is key to providing what publics want and expect from online sources.

As new technology emerges and media companies adjust to new ways of delivering news to the public, existing work practices are becoming outmoded. As Rennie says, “Best practice hasn’t even been developed yet”, as the pressure to compete in a changing environment takes precedence.

## **CONCLUSIONS AND RECOMMENDATIONS**

Observing the participants in a filmed interview was all encompassing as they shared their experiences, thoughts and understanding of this research topic. Many of their comments connected to a humanistic standpoint revealing concerns for the future, as well as for the protection of human rights in a democratic society, Democracy (2004).

From a critical communication perspective, it can be argued that humans are open to exploitation because of a lack of awareness and understanding about the implications that the use of AI has on the provision of important news stories to the public. With this in mind, the purpose of producing a film documentary on this topic is to contribute to the development of such awareness for public audiences, based on the findings of this research project.

There is a complex interdependence as Spence (2011) suggests, between key stakeholders involved in the creation of news content and the gathering of information, such as, media organizations, AI engineers and society at large, as they all come to terms with this technological phenomenon, Stanford (2013), In fact, in many ways humans are continually catching up to the continual innovation of Artificially Intelligent systems. This raises the profound

point about inductive approaches to how progress is managed. As Brey (2017), suggests, this allows for better awareness of what is occurring now, rather than relying on a situation in which people are ignorant to the possibilities of what may lie ahead.

While the business world strives to stay competitive and to keep up with the changes at hand, society on the other hand, is motivated by different reasons and not all of them coincide at the same time or pace. Redefining what is important to the human race, particularly as we will be sharing our lives more and more with Artificial Intelligence systems and robotic technology, is a vital component to this research.

I conclude that, our need to communicate is what makes us human, we are after all, creatures that strive from the practice of communicating to each other, and our right to make informed choices relating to the management of individual data, is a key factor in the way we progress forward. Furthermore, we like to know what is happening in the world we live in and as Spence et al (2011, p.199), suggests, the storyteller or bardic function of the media is an essential part of cultural life. Stories, portrayed through media can influence how we think, how we identify ourselves and what we do.

Research in the area of consumer awareness and public opinion although limited, reveals that members of the public are often not even aware of the major role that algorithms play in journalism, Graefe (2016). Evidence of how this will affect society is lacking and inconclusive. In fact, this knowledge is vital for robust public debate on what the expectations society has for the provision of important news content.

As we experience the fastest changing Industrial revolution of all time, the race to break through barriers and achieve new outcomes, is clearly between humans and technology. This is a critical point that supports my reason for conducting a combined research strategy, which includes commercial understanding as well as individual viewpoints. As Iorio (2011), mentions,

both journalists and qualitative researchers share a common concern with the actions of individuals in relation to current phenomena.

Technology is driving commercial gain, although the key players in this picture are the public, as readers, writers and audiences of news content. Without public knowledge or awareness of how AI in the communication practices is affecting our democracy, society is at risk of being manipulated by these robotic systems into thinking and acting on information that is based on machine learning.

Traditional media essentially acts as an advocate for people's voices to be heard, although there is a concern that news selection is derived from a populist viewpoint, meaning that challenging viewpoints and vital information could be missed altogether, limiting knowledge and alternative perspectives on important topics of information. This can affect our worldview and our understanding of current situations.

As society realises the implications that this new approach to the communication of news can affect their everyday lives, a call for transparency and accountability could again create new commercial challenges to adjust to greater demands.

For example, two common points highlighted in this research project are: firstly, that people need to have control over their data and secondly, that transparency of practice will enable the public to trust in news providers. Ethical practice was emphasized as a critical measure within media organizations.

Although Kent (2015), has designed an Ethical Checklist for media organizations to work with, (Spence 2017), explains that, "Quite often the principles behind the ethics are not always obvious to the users", leading me to consider how media organizations can incorporate ethical practice into their decision-making and actions.

My recommendation is a three-pronged approach involving key stakeholders involved in the communication of news.

Firstly, I would suggest that media organizations develop a Best Practice Model as a guide to working in collaboration with Artificial Intelligence systems. Rather than simply accepting that a code of ethics is a primary guideline in media professions, a Best Practice model for the use of AI in media would actualize these fundamental approaches in business practice. I would also encourage this to be implemented in 'real time' rather than in several years from now, so that our relationship with new technology is guided in a way that meets the needs of both news providers and society at large. Even though components of it may change over time, I believe the guidance of ethical practice will support such changes, as progress continues.

Secondly, I support McCalmans (2017) suggestion of embedding ethics into algorithmic design. This is an essential element required in AI systems and would assist media organizations in ensuring this approach is aligned with all information sources.

I also highly recommend that on going reflective dialogue between all disciplines be exercised to ensure that awareness and understanding is shared, for the purpose of strengthening sound judgments and actions, moving forward. I emphasize the importance of including the public in such discussions to encourage a collaborative approach to further developments. As (Spence 2017), says, "determining what's good for humanity is a complex issue", so listening to different perspectives will assist in identifying particular improvements to the way in which the communication of news is achieved alongside Artificial Intelligence systems.

This quote prompted me to think about our process of decision-making throughout this technical phenomenon:

Where is the life we have lost in living?  
Where is the wisdom we have lost in knowledge?  
Where is the knowledge we have lost in information?  
(Elliot 1934)

Wise decisions will benefit all stakeholders in this race for change – a crucial approach to maintaining our place alongside Artificial Intelligence technology, both in the present situation of development and in the future.

## **APPENDIX**

### **Documentary Trailers**

<https://vimeo.com/325136163>

<https://vimeo.com/259279318>

### **INTERVIEWEES**

[REDACTED]

## **REFERENCES**

Agrawal, A. J. (2016, April 4). What do social media algorithms mean to you, *what all this means for businesses*.

Retrieved from: <https://www.forbes.com/sites/ajagrawal/2016/04/20/what-do-social-media-algorithms-mean-for-you/#76d9abb5a515>

Alexander, C., (2017) Recorded interview with the researcher, Sina Summers  
Alexander, C., (2017, October 21) In *Changed by Technology*, an audiovisual documentary produced by Sina Summers. Retrieved from:  
<https://vimeo.com/262013052/c00835ed40>

Brey, A.E.P (2012), *Anticipatory ethics for emerging technologies*, University of Pennsylvania Law School.

Brey, A.E.P. (2017). *Ethics and technology*.

<http://ethicsandtechnology.eu/wp-content/uploads/downloadable-content/Brey-2017-Ethics-Emerging-Tech.pdf>

Creswell, J.W (2014) *Research Design*, p. 20, p.29

Democracy, (2004), *What is Democracy?* Lecture at Hilla University for Humanistic Studies

<http://web.stanford.edu/~ldiamond/iraq/WhalsDemocracy012004.htm>

Eliot, T.S, *Choruses from The Rock (1934)*, as cited in Spence (2009), *Information, knowledge & wisdom: The normative evaluation of digital information & its relation to the good life*.

Epistemology, (2005) *Sources of Knowledge and Justification, Introspection 4.2*, Stanford Encyclopedia

Galletta. A (2013), *Mastering the semi-structured interview and beyond from design to analysis and publication*, New York University Press, P. 46

Hobbes, T, (Revised 2014), '*social contract theory*', Stanford Encyclopedia of Philosophy

Iorio, S. (2011) *Qualitative research in journalism: taking it to the streets*, Routledge, p. 7, p. 11

Journalist Code of Ethics, (Renewed 2017) Australian Media, Entertainment & Arts Alliance (MEAA) number 6 & number 8 codes.

<https://www.meaa.org/meaa-media/code-of-ethics/>

Kent, T. (2015), *An ethical checklist for robot journalism*, Medium

<https://medium.com/@tjrkent/an-ethical-checklist-for-robot-journalism-1f41dcbd7be2>

Graefe. A (2016), *Guide to automated journalism*

<https://www.cjr.org/towcenterreports/guidetoautomatedjournalism.php>

Higgins, P (2017) Recorded interview with the researcher, Sina Summers  
Higgins, P (2017, October 26) In *Changed by Technology*, an audiovisual documentary produced by Sina Summers. Retrieved from:  
<https://vimeo.com/262013052/c00835ed40>

Mashford. B (2017) Recorded interview with the researcher, Sina Summers  
Mashford. B (2017, October 26) In *Changed by Technology*, an audiovisual documentary produced by Sina Summers. Retrieved from:  
<https://vimeo.com/262013052/c00835ed40>

**McCalman, L., Durrant-Whyle, H., O’Callagher, S., Reid, A., Steinberg, D.,**  
(2017), *‘Ethics by numbers: how to build machine learning that cares’*, The Conversation.

Meyers, S., (2017) Recorded interview with the researcher, Sina Summers  
Meyers, S., (2017, October 21) In *Changed by Technology*, an audiovisual documentary produced by Sina Summers. Retrieved from:  
<https://vimeo.com/262013052/c00835ed40>

Munro. K (2018), *The Cambridge Analytica Facebook data breach explained*, SBS.  
[https://www.sbs.com.au/news/the-cambridge-analytica-facebook-data-breach-explained?cx\\_cid=edm:newsam:2017](https://www.sbs.com.au/news/the-cambridge-analytica-facebook-data-breach-explained?cx_cid=edm:newsam:2017)

Newman. N (2016), *Overview and Key Findings of the 2016 Report*, Research Associate, Reuters Institute for the study of Journalism.

Pearce, D (2017) Recorded interview with the researcher, Sina Summers  
Pearce, D (2017, November 17) In *Changed by Technology*, an audiovisual documentary by Sina Summers. Retrieved from:  
<https://vimeo.com/262013052/c00835ed40>

Phenomenology, (2013), No. 2., *The Discipline of Phenomenology*, Stanford Encyclopedia.

Rawls. J, (Revised 2014), Original position, *The Veil of Ignorance*, Stanford Encyclopedia

Rennie, A (2017) Recorded interview with the researcher, Sina Summers  
Rennie, A (2017, October 20). *Changed by Technology*, an audiovisual documentary by Sina Summers. Retrieved from:  
<https://vimeo.com/262013052/c00835ed40>

Santa-Wood, B. (2018), *Bridging the gap report outlines worldwide efforts to*



*rebuild citizen trust in media*, International Journalists Network, ijnet.org.

**Schiffrin.** A., Santa-Wood. B., De Martino. S., Hume. E., Pope. N. (2017), Bridging the gap: *Rebuilding citizen trust in the media*, International Journalists Network, ijnet.org

Spence. E. H., Alexandra. A., Quinn. A., Dunn. A., (2011), *Media, markets & Morals*, p. 11,16

Spence, E.H (2017) Recorded interview with the researcher, Sina Summers

Spence, E.H (2017, November 16). *Changed by Technology*, an audiovisual documentary by Sina Summers. Retrieved from:

<https://vimeo.com/262013052/c00835ed40>

Summers, I (2017) Recorded interview with the researcher, Sina Summers

Summers, I (2017, October 21) *Changed by Technology*, an audiovisual documentary by Sina Summers. Retrieved from:

<https://vimeo.com/262013052/c00835ed40>

Thurman, N (2017). *Robonews – what journalists think of their new automated rivals*, *The Conversation*.

Utilitarianism, (Revised in 2014), *Stanford Encyclopedia*

Wallis, J (2015). School of Information Studies at Charles Sturt University, *The impact on Democracy, How political engagement on social media can drive people to extremes?* *The Conversation*.