

The Distortion Machine

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Dedicated to Alex with thanks and love

“And isn't it a bad thing to be deceived about the truth, and a good thing to know what the truth is? For I assume that by knowing the truth you mean knowing things as they really are.” (Plato)

“Have you ever had a dream, Neo, that you were so sure was real? What if you were unable to wake from that dream? How would you know the difference between the dream world and the real world?” (Morpheus)

*“Things are going to slide in all directions,
Won't be nothing you can measure any more.
The blizzard of the world
Has crossed the threshold
And it has overturned
The order of the soul” (Leonard Cohen)*

“Every time I see an adult on a bicycle, I no longer despair for the future of the human race.” (H.G. Wells)

** The quotations at the beginning of each chapter are from poems by e e cummings*

CONTENTS

| | |
|---|----|
| Introduction | 1 |
| Chapter One..... No Longer Social? | 3 |
| Chapter Two..... No Longer True? | 17 |
| Chapter Three..... No Longer Real? | 29 |
| Chapter Four..... No Longer Certain? | 43 |
| Chapter Five..... No Longer Human? | 49 |
| Chapter Six..... No Longer 21st Century? | 59 |
| Endnote..... Dwellers on the Threshold | 73 |
| References | 85 |
| Index..... | 93 |

INTRODUCTION

“-tomorrow is our permanent address”

There was a time in the early 2000s when the emergent social media were seen as new and subversive, giving agency to those for whom mainstream communication channels were no longer sufficient, relevant or engaging. In their beginning, social media were associated with the voices of youth, freedom, experimentation and creativity, inventing spaces where socialisation, commerce and self-expression were in turn co-creating new opportunities for democracy and intimacy. The future of the new technologies appeared to be affirming and positive. Commentators were convinced that social media would change the way in which we engaged with each other for the better. Then, in 2011 Sherry Turkle published a book entitled "Alone Together" that changed the dynamics of conversations around social media. Adapting the words of Winston Churchill, she argued that first we shape our technologies, after which they shape us. She described eloquently how online relationships created new instabilities in our understanding of privacy and community. Turkle's narrative is a story of emotional detachment and naive risk-taking. Her ideas have sparked a number of debates about social media spaces (Cerf, V., 2011) that have neither slowed down nor decreased in intensity. In the meantime, however, development of these technologies themselves did not slow down and continued to multiply, divide and mutate to a point where they have evolved to take centre stage in many human transactions. They have also become mainstream, with Twitter dominating the social media presences of the powerful and influential.

As Twitter eventually became the primary tool in 2017 of many famous and powerful world leaders, Donald Trump especially has helped redefine the purpose of social media, using them as vehicles for reaching directly out to people. His public foray into this arena has been met with hope, despair, delight and revulsion by both political commentators and the public in the United States and around the world. Social media have evolved from being edgy, disruptive, personal, democratic phenomena into powerful tools of political, economic and educated classes and institutions. The adoption of social media as mass tools has also shaped our collective

sense of reality and truth. Examples of our enthusiastic adoption include online dating, the rise of the algorithm, criticism and perpetuation of "fake news" and the increasing tendency towards renting or leasing rather than purchasing cultural artefacts. Our diet of online films, music, books and news has created a type of consumerism; one where virtuality and disposability are on the rise and have become the norm. At the same time, our personal data are mined to ensure our wants and needs are met quickly and efficiently by online robots. With the rise of commercially affordable virtual reality, a new type of hyper-reality may be upon us. We are unsure what this means for our sense of what is real and what is certain. We are entering a new era of transhumanism with the rise of assistive, implanted, robotic devices and the emergence of nanotechnology. We try to negotiate this changing landscape and understand what this may mean for the next generations of children and young people, and the role of schools in making sense of this all. This book examines the social, technical and educational implications of a society where hyper-reality, artificial intelligence and robotics may be at the centre of the new online spaces that will surely further shape us into an unknown future.

CHAPTER ONE

NO LONGER SOCIAL?

*“the snow doesn't give a soft white damn
whom it touches.”*

The beginnings of digital social media date back to 1973 when Talkomatic was first developed by Dave Woolley and Douglas Brown at the University of Illinois as a multi-user chat room application. This was quickly followed by TERM-Talk, an application that included screen-sharing within the University's PLATO network. During this time, use of these platforms was largely confined to the university population and the earnest young computer programmers who developed them.

The first widespread form of social media however, came with the release of BBS in 1980. This was a platform that was to remain popular for the next two decades, although by 1988, IRC (Internet Relay Chat) had developed, one version (Quakenet) remaining in use for the next 25 years. The rapid growth of the World Wide Web and TCP/IP protocols in the mid-1990s saw an increase in the number of social networking platforms including ICQ, SixDegrees and AOL Messenger. The development of the latter sparked a proliferation of similar messaging programs by the online giants including Yahoo! and MSN, later Windows Messenger.

Gaming also soon became an added feature of social networking with the launch of Habbo in 2000 and Friendster in 2002. The mid 2000s saw the expansion of a large number of significant social media companies including Bebo and MySpace, many of whom still command a large share of the (sometimes niche) social networking market. These include Skype (latterly acquired by Microsoft), LinkedIn and Facebook. As of 2017, Facebook had nearly 2 billion active users and featured voice and videocalling as well as messaging services. The mid 2000s also saw a growth in social video platforms. YouTube started in 2005 and was acquired by Google in 2006. Flickr also launched in 2004, and was soon to be bought out by Yahoo!

Twitter, the favourite platform of President Donald Trump in 2017, was launched in 2006 and gradually became a popular channel for politicians wishing to bypass conventional, institutional media channels in order to broadcast their message directly to a wider audience. Image and video - based social media channels such as Instagram, SnapChat and Pinterest also become increasingly popular in the sphere of mobile social media. Dating platforms such as Tinder and Grindr have also grown in popularity and are no longer seen as underground or clandestine applications.

Of course, many broader, transaction-focussed websites such as Amazon and eBay have a more extensive social context, not only in the way in which people interact online with each other (or artificial intelligence agents) but in the way in which they can influence the popularity of goods or services through ratings and recommendations. Since the early, specialist days of social networking, social and commercial digital interactions have become increasingly and substantively mainstream. This is not, of course, to underestimate the disruptive and subversive potential of social media. As Mark Zuckerberg, the inventor of Facebook said, "Unless you are breaking stuff, you are not moving fast enough". There was and continues to be an adventurous or reckless and entrepreneurial edge to social software development.

With this proliferation, it could be argued in 2017 that any interactive digital channel or app now constitutes social media. The word "social" in any human context is, of course axiomatic as in any case the very nature of communication between humans has always been social. This has also become increasingly true of interactions between the human and the machine. For example, Amichai-Hamburger and Vinitzky have argued that there is a strong connection between personality and Facebook behaviour (Amichai-Hamburger, Y. and Vinitzky, G., 2010) that is rooted in human/machine interactions. The platforms themselves are behaving in approximations of artificially intelligent ways.

Whether it be when ordering a taxi through Uber, or searching for human connection, companionship or erotic pleasure on Tinder, the engagement between the technology and the human is becoming closer and more intimate. Or, if not intimate then at least (to borrow from Baudrillard) a simulacrum of intimacy (Baudrillard, J., 1994). Our fascination with human/machine interaction has become evident in films released in recent years. Between 2013 and 2017 a trend has become evident in cinema with the role of apparently sentient artificial intelligence in the world featuring

prominently in a number of major releases including *Ex Machina*, *Lucy*, *Transcendence*, *Automata*, and *Her*.

However, it may be that the very label of "social media" has ceased to be useful through its very own tautology. The fact that media *is* social is a self-evident truth and we do not really think of platforms or apps as being explicitly social. They are just made and used in that way. Communications, media and digital relationships are now mainstream domains. Personalised messaging, and spontaneous, synchronous connectivity are also now ubiquitous and the algorithm appears to rule our lives. Everything seems to be accelerating. However, as Eli Pariser argues, our human brains autonomically balance between learning too much from the past and synthesising too much new information from the present. He sees this ability to strike a balance by adapting to changing environments as a human cognitive trait that artificial intelligence can never replicate (Pariser, E., 2011). Since his seminal publication on the "filter bubble", recent developments in artificial intelligence have led to rapid improvements in deep reinforcement learning and generative adversarial networks (GANs). GANs generate new data based on prior learning and are increasingly able to discriminate between genuine and false data. Other techniques in voice and image recognition are enabling machines to parse and generate language more effectively. If we are still some way off from truly intelligent machines, we are getting closer to machines that will be able to simulate human intelligence and pass the Turing Test, in which computerised responses are indistinguishable from human responses given to direct questions (Turing, A., 1952). If we cannot distinguish the artificial from the real, it may not matter who we think we are talking to.

Debates around artificial intelligence have often dealt with ontological issues about what is real and what is not, as if the online world was different to the offline one (Ryan, M.L., 1991). In recent years, however, the two have actually converged to the point where, amongst young people, engagement with digital technologies is often inextricably bound up in their human lives, relationships and work. The two may not co-exist. They have become indistinguishable and the artificial binary divide between the online and offline no longer seems helpful. With the ubiquitous adoption of the portable, the personal and the connected we are seamlessly tied into the digital contract. The hard boundaries between online and "real" worlds no longer seem to exist.

Just as these actual and virtual boundaries are quickly disappearing, so the delineation between online commercial and online social engagement has

largely disappeared. The use of complex algorithms to mine data from high profile and well-known websites such as Google, Facebook and Amazon (as well as other apps) is now well known and largely accepted by the human as consumer, participant and co-conspirator. In order to be constantly fed customised, tailored information about news, culture, goods, services, potential sexual partners or the weather, users are prepared to enter into explicit or tacit contracts that allow rich and deep mining of their personal data. And they do so enthusiastically. There is, of course no such thing as a free lunch and as Eli Pariser warned in 2011 "If you're not paying for something, you're not the customer; you're the product being sold" (Pariser, E., 2011). Social engagement has always been an important part of consumer behaviour. It is now both a currency and a commodity with which to barter. To be social is to be both part of a commercial transaction and to be complicit in aiding invasions to our own privacy.

Those people who were born in the mid-1990s at the time of the invention of the World Wide Web by Tim Berners-Lee have now completed their university education and have entered the workforce. Their recreational activities, shopping, relationships and careers are not defined by an artificial binary divide between what is digital and what is not. That which is online and that which is offline form part of the same habitus, and their digital footprints are permanent artefacts of where they are now, where they are going and where they have been.

Five years after the World Wide Web was introduced to the general public, Tim Berners Lee expressed concerns about issues around censorship, privacy, the increasing power of software companies, and the imperative to establish a balance between commercial and social online influences and forces. He continues to be concerned that the balance was never achieved, and that those influences and forces are now inseparable. The fusion of the social and the commercial is the status quo. We are socially and commercially visible and vulnerable, irrespective of any contrary wishes we may have and irrespective of our desire to control.

Most modern search engines use a variety of data mining techniques to track users' viewing habits. Search engines that offer voice-activated and voice-aware searching store these searches so that the most relevant advertisements are activated and deployed, and future searches are even further refined and customised. Most search engines also store the results of individual searches unless otherwise instructed, and even then the user cannot be completely sure of their privacy. In addition, locations and other

demographic data are also recorded and automatically cross-referenced when search results are compiled.

The search engine companies are not the only organisations that are mining data from citizens' web searches. The British government also shows a keen interest in individuals' online activity. The Investigatory Powers Bill has been passed by both British Houses of Parliament and became enacted in law in December 2016. Its purpose is to increase the powers of the UK intelligence community to access private, online data. Under this Bill, the government is able to access individuals' internet history data at will and without notice, and is able to store these data for up to one year. The intelligence community comprises British police forces, the Secret Intelligence Service, GCHQ and the Home Office, each with their own unique interest in people's online activities. The use to which they put these powers is primarily but not exclusively restricted to national security.

As end-user computing has become dominated in the past decade by fourth screen technology (mobile, portable devices), this has changed the way in which people engage with and use social media. We use multiple devices as we move around, creating yet more data points to be captured, analysed and used by government and businesses. Most popular social media apps exploit these capabilities, which are ubiquitous in phones and tablets. Many image sharing applications are used almost exclusively on such mobile devices. Dating apps too, are popular on phones, using location-based data to predict and generate viable human matches for the purposes of casual or longer term companionship. Increasingly too, mobile social media platforms offer bespoke experiences relating to a specialised areas such as private or public image sharing, trading, casual dating, serious matchmaking, eating and drinking. Used together or separately, these apps help to build a profile or identity of the user, which is often used and shared by development companies. Using existing accounts on apps such as Google, Twitter or Facebook, users can register with third party apps thereby creating a new, personalised network of apps which interact with each other, exchange or sell data and share a common goal for the users to increasingly engage with products and services. The array of icons or buttons on the user's device is totemic, helping to signify the user's online identity, affiliations, interests and demographic groupings. With users increasingly able to post content on multiple apps from one data entry point, this further weaves a complex social and commercial web that is unique to each user and commercially valuable to the providers. With the mutation of social media from enhancing interconnected,

democratic agency to becoming a fundamental cornerstone of society, it can be clearly seen that social networking has become mainstream, integrated and perceived as being socially essential.

There is no doubt that, in recent years, tools such as YouTube, Facebook and Twitter are altering the way in which the business of politics is conducted, messages are broadcast and engagement with the electorate is managed. Video footage and photographs captured on phone by bystanders are regularly featured in mainstream media, with broadcasters and newspapers actively encouraging contributions from the public. It is also sometimes difficult to differentiate an articulate, amateur blogger from a professional journalist. Social media in news reporting has become accepted as mainstream and it appears as if individuals are now exerting greater control over their own consumption, reporting and generating of news.

Improved connectivity, powerful and personalised mobile devices, and quick-capture sound, image and video apps have contributed to this mainstream adoption of social media. This has led to changes in the way that news media interact with the public. It has also meant that in many cases, journalists and reporters are not the first reporters on the scene. Real-time (unverified) updates on Twitter are often the quickest way to consume and participate in the creation, commentary and dissemination of news. Traditional news media channels have accepted this, often choosing to focus on verifying the validity and reliability of news and its sources instead of claiming to be the first on the scene. Of course, journalists too use social media tools for their own purposes by creating another dimension for analysing and propagating events and opinions. Social media are part of the professional's toolkit.

With news, as with other social media applications, the social and the commercial are enmeshed and often inseparable. The public can generate, capture, publish, consume and comment on news. The traditional custodians of the news no longer have complete control over the reporting of local, regional and global events. This creates new freedoms but also brings with it certain risks. Now that world leaders report their own 'news' on Twitter, the only curators are their own advisers, and even these may not function as intermediaries between political declarations and public consumption of tweets. In one sense, the locus of control has moved away from the traditional media controllers to the individuals and their ability to curate their own news. However, with less moderation and validation of breaking news by professional journalists, powerful, establishment figures

are able to communicate directly to the public in an unmoderated way, especially if the comment feature on their social media channel is turned off, thereby giving their posts an air of unchallenged and unchecked authority. Social media often appear to be superficially democratic in their functionality and accessibility, but they sometimes have a long tail (Huberman, B.A. and Adamic, L.A., 1999). Those with the greatest number of followers may have the loudest voices. The locus of control has not necessarily shifted entirely into the public arena. Social media may be about empowerment, but they are also about power and the powerful.

Sherry Turkle (Turkle, S., 2011) has argued persuasively that digital technology is at its most attractive when what it offers appears to meet our human weaknesses. According to Turkle, as humans we are vulnerable and therefore susceptible to the seductive powers of new technology. Our lives, lived digitally, mean that we are never alone. However, she contends that we still require an element of control over how the technologies are used and this is most easily achieved when our engagement with others is conducted primarily online. By expressing ourselves to a mass audience online, without mediation, moderation or comment, we can present multiple avatars of ourselves, which can only be contested back through the medium. To do that effectively we need to have accumulated an as large as possible quantum of followers. It is an easier exercise for the famous and powerful. It may be less effective for the rest of us.

Kwak et al (Kwak, H., Lee, C., Park, H. and Moon, S., 2010) analysed over 41 million Twitter user profiles and identified 1.47 billion social relations, 4,262 trending topics, and 106 million tweets. In order to identify the most influential users on Twitter, they ranked users by the number of followers they had and classified the highest trending topics. They found that the majority of topics are headline news or persistent news in nature. They also found that retweeted tweets reached, on average, 1,000 users irrespective of the number of followers of the original tweet. Powerful users of Twitter rely on followers to ensure the messages goes viral. This helps ensure not only the propagation of the messages themselves but also the culture, tone and bias inherent within the message.

On May 4, 2009, @realDonaldTrump started his journey towards having 27 million followers. Although not an early adopter of the technology, Trump was one of the first global figures to use Twitter to not only communicate with followers, fans and the merely curious but to create a culture and a personal mythology through the use of social media. With the then curious habit of referring to himself in the third person, he was

able to further create a persona that was deeply personal and also fantastical. His regular use of Twitter as an echo chamber for the propagation and embedding of his messages helped create a sympathetic, anti-establishment online affinity space where the disillusioned, disenfranchised and the marginalised could perhaps feel that there was at last a voice that spoke to their fear, their hopes, bitterness and their social and political biases. One of the key tools that Trump developed was the self-referential quoting of himself and signing of his own tweets, thereby emphasising and entrenching his identity, at the same time creating an avatar or simulacrum of himself through the use of Twitter. An analysis of Trump's Twitter account in between 2016 and 2017 reveals some interesting statistics:

During this period, over 3,000 tweets were posted with 94.8% being retweeted over 35 million times and favourited over 117 million times. This shows not only a rapid and systematic growth in the amount of Twitter traffic being generated by him, but also the viral nature of the themes of his tweets and the positionality of the tweeter and retweeter. What appears to be the careful use of hashtags has ensured that a high level of interest has been sustained in the Twitter feed with over 1200 hashtags being deployed during that period of time. The traffic has been moderately consistent, with an average of nine tweets being posted per day, a plausible reported number for one person tweeting alone, giving authenticity to his ownership and authorship. The most used hashtags are an interesting balance between the personally aspirational (#trump2016), the nationalistic (#makeamericagreatagain, #maga, #americafirst) and the politically provocative (#draintheswamp).

These themes are also reflected in his most retweeted posts. The most popular amongst Twitter users was the nationalistic "TODAY WE MAKE AMERICA GREAT AGAIN" (8th Nov 2016, note the capital letters). This was followed by the expansive "Such a beautiful and important evening! The forgotten man and woman will never be forgotten again. We will come together as never before" (9 Nov 2016). Also popular was "How long did it take your staff of 823 people to think that up—and where are your 33,000 emails that you deleted? [Twitter.com/hilaryclinton...](https://twitter.com/hilaryclinton)" (9 June 2016). This rhetorical and provocative post, mocking a political opponent was widely retweeted and was significant in perpetuating both media and public allegations against Hilary Clinton. It possibly proved subsequently to be an effective strategy. Following Trump's election as President of the United States, he marked the end of the year with the ironic tweet "Happy New Year to all, including to my many enemies and those who have

fought me and lost so badly they just don't know what to do. Love!" (31st December 2016). This highly personal, political tweet was retweeted over 140 thousand times and favoured by 350 thousand users. Clearly the tone of the post appealed to a large number of Twitter subscribers who were following Trump. The singularly personal way in which Trump used Twitter is also reflected in his device of choice used when tweeting. In the twelve months analysed, the most common platform used was a phone generating 2907 tweets, followed by a web client (PC or laptop) 265 times and a tablet being used 22 times. His most popular days for tweeting were Monday, Tuesday and Wednesday with the most popular times of tweeting being 1000 and 2300. The ease with which these data were obtained also begs the question of privacy. It is relatively simple to ascertain where, when, how and with what device tweets are generated. Although the powerful gain potentially greater power through the use and appropriation of social media to create news and knowledge, they are also becoming increasingly more exposed to public scrutiny. Trump's tweeting habits are a matter of public record. It can be seen that his success in the use of social media may be measured by the number of his followers, the number of his tweets and the large number of retweets he achieves. He has also popularised the concept of "Fake News" leading to ongoing, interesting and perhaps sometimes ironic comments about truth and validity.

Although references to online "Fake News" dates back to 2001 (Martinez-Torres, M.E., 2001), it has recently become a phenomenon not only due to the adoption of the phrase as an accusatory label by Trump but, because it has become a meme, consistently broadcast and re-broadcast until the phrase came to mean anything with which Trump disagreed. Although he is a well-known practitioner of social media techniques, these practices are by no means restricted to him or to his allies and those sympathetic to his politics. They are widely practiced by many political and social movements. They are however, remarkably prevalent amongst the populist political causes of the late 2010s. These causes create their own echo chambers online. Following the British European referendum and the elections in Europe and the USA in 2016 and 2017, these online echo chambers became louder with the perception that members of the public were becoming protected from a wider range of opinions and ideas due to the profiles of those they had friended or followed online. Reddit is a social news aggregation tool that incorporates content rating and comments. It has become a leading online tool for Trump's supporters with substantial connotations of right-wing bias. It is a vibrant and popular community of practice and also a space where memes, social and political theories and soundbites are incubated and tested. With 500 million

monthly visits, Reddit was in the top 10 of visited websites in 2017. Websites and apps such as these employ increasingly sophisticated algorithms to curate, sort, categorise, store and deliver information in ways that are designed to deliver highly refined, targetted and individualised ideas and opinions to users. Pariser's "Filter Bubble" and the echo chamber are becoming rarefied online spaces inhabited by both individuals, and political and social tribes. Although they are simulacra of the tribalism of the material world, the online borders and boundaries of these tribes are not as immediately visible. Social media algorithms shield us from outside views and opinions that differ from our own.

In 2017, the inventor of the World Wide Web, Sir Tim Berners-Lee wrote an open letter (Berners-Lee, T. 2017) outlining a strategy to combat concerns he had about the way the Web was being used. He saw the way that personal data was being mined and used as having a negative effect on free speech, especially where governments (both totalitarian and democratic) are using web data as a way of monitoring citizens' online activity. Picking up the theme of "Fake News", he also expressed concern about the way in which websites deliver personalised information based on algorithms that harvest and use personal data. He saw this as a way of perpetuating 'fake news', which is sensationalist, prurient or appealing to prejudices and biases. Far from fulfilling its intention to be a platform for everyone, Berners-Lee sees dangers in the power of the web being vested increasingly in the hands of a minority.

Social media can give an equal exposure to both factual and fictional stories. The success of an online story is measured by its clicks, followers, likes or retweets. The accuracy of the stories is often discernible at first viewing, but where influence or monetary gain is measured by popularity, the importance of this veracity is often secondary. The ease with which false news can be spread means that the propagation of falsehoods can often be enabled by those with good intentions, sometimes including professional journalists.

In the United Kingdom, the phenomenon of fake news has become so much of a concern that the Commons Culture, Media and Sport Committee investigated concerns about the impact of its influence on the unsuspecting public. The committee was partially set up as a response to the alleged influence on voters in the United States of fake news. Of course, the term "fake news" is both relative and relativistic, with Trump using the term to deprecate the NY Times, CNN and the BBC. It is a most subjective phrase. Berners-Lee has suggested a set of principles for the

design and delivery of websites to allow for greater transparency in the way in which information is presented.

Acemoglu et al (Acemoglu, D. & Ozdaglar, A. Dyn, 2011) have argued that there are questions one needs to consider when examining sources of information, relating to whether or not phenomena are directly observed or communicated, and the structure of social networks in which individuals are situated. They are concerned with whether social learning leads to consensus, or the agreement among individuals starting with different viewpoints. They also consider whether social learning will effectively aggregate dispersed information and therefore help to eliminate incorrect beliefs. In addition, they examine whether media sources, prominent agents, politicians and the state are able to manipulate beliefs and spread misinformation in a society. Assuming that the elimination of fake news is probably not possible (or desirable) through social media, these three questions would be useful touchstones for an ethical examination of social media in the context of helping to (at least) identify fake news. Although the World Wide Web is by its very nature relativistic, some ethical parameters for examining its impact on our collective sense of what is valid and reliable will help to identify and segregate fake news, although it probably cannot be eliminated entirely. In any case, fake news covers a spectrum of misinformation and falsehoods, ranging from the ethically disoriented to the completely untrue. The concept of truth is highly contested and difficult to define.

Part of the controversy around the fake news and the 2016 elections in the United States of America involved the alleged interference in the democratic process by the Russian government, specifically its intelligence agencies. If true, this is the most obvious and apparent case of political cyber interference to date. If untrue, it is a singular example of fake news in its own right. It can be argued that this political cyber interference is possibly a less malignant manifestation of cyber terrorism. The concept of terrorism conducted online has been around for a considerable time. Pollitt argued In 1998 (Pollitt, M.M., 1998) that the definition of cyberterrorism combines the United States Department of State's definition of terrorism as politically motivated acts of violence against non-combatants with a definition of cyberspace as the computers, networks, programs and data which make up the information infrastructure, specifically the internet. At the time Pollitt was led to the conclusion that by limiting the physical capabilities of the information infrastructure, the potential for physical destruction could be limited. We can see that 20 years later, this has not proved to be the case. The physical

specification and location of infrastructure does not necessarily limit the damage it can inflict when used for nefarious purposes. The virtuality of online tools do not limit the damage they wreak, as seen not just through the propagation of fake news, but through the disruption, appropriation and sabotage of critical online state, commercial and social digital systems.

The irony inherent in this is that rather being a democratising technology as it was originally perceived, the internet may be damaged by the cyber interference that can work against these democratic imperatives. Loo argues (Loo, E. 2007) that depending on how one measures the internet's potential for democratisation, one can see its influence as being either positive or negative. If one accepts that one of the underlying principles of the internet is the enablement of free expression and social engagement, then it can be seen in a positive light (unless one lives in North Korea or Tibet). One can accept that technology is neither inherently good or bad, it depends on its context and application. It also depends on the positionality of the individual user. Moral, cultural and political relativism are apparent in both the World Wide Web and other internet-based applications. The internet is a complex and messy place to be.

It is only in recent times that digital ethics was seen as an area of increasing interest for both academics and schools. The potential of the internet as an agent of democracy depends upon the individual user, but also on the application of power by those who command the largest audiences and therefore the greatest influences. Although the internet is a tool through which ideas and opinions are incubated, recorded and disseminated it is not just a "tool". The subtle connectivity between the human network and the technological network means that technology cannot ever be neutral. Overlaying an individual area's political and legal constraints will inevitably also colour the way in which information is sought and obtained, and the way in which individual and group communication is enabled. As our individual and collective use shapes the technology, so the technology is changing and adapting our lives at the same time. We are connected with the technology in joint but potentially unequal evolution.

Many years ago, the great phenomenologist Heidegger argued (Heidegger, M., 1954) that technology reveals something fundamental about human existence. Social media has certainly held up a (sometimes) distorted mirror to us as individuals and also to us collectively. We could ask ourselves whether the reflection is something that we recognise or

something that we like. Like Dorian Grey (Wilde, O. 1891) there may be a degenerating version of ourselves hidden behind the cultivated personae created through social media. Twenge examines (Twenge, J.M., 2013) young people's engagement with internet-based technologies, especially social networking websites. She considers whether social media has led to better engagement and a more positive view of ourselves or whether, as Turkle has already observed, we are "alone together". She concludes that although social media use may lead to what is now called "virtue signalling" (Bartholomew, J., 2015) it does not appear to necessarily lead to deeper engagement in social or political issues (such as writing to public officials or having more knowledge about politics). Twenge contends that social media can help to build shallow, superficial relationships, increase narcissism and selfishness, and may lead to mental health issues. She states that increased use of social media is associated with a decline in young people's empathy for others, and in civic and political engagement. However, the opposite may also be equally argued.

Not only can it be seen that, from some perspectives, social media may be stifling rather than enhancing social interaction, social media itself can in turn be seen to have morphed into a vehicle where content is incubated, knowledge created and subjected to the distortion, misrepresentation and bias inherent in human opinion. But then, that may be just be the nature of the imperfect human condition. The distortion machine may simply be amplifying our frailties.

CHAPTER TWO

NO LONGER TRUE?

“knowledge is a polite word for dead but not buried imagination.”

According to the Oxford Dictionary, the word of the year in 2016 was "post-truth", defined as ‘relating to or denoting circumstances in which objective facts are less influential in shaping public opinion than appeals to emotion and personal belief’. This word has been examined enthusiastically in the context of both educational and philosophical responses to the phenomenon of living in an increasingly overtly subjective world (Peters, M.A., 2017). It represents and to some extent, validates both a postmodern relativistic view of the world and presents phenomenological challenges as to how we perceive and react to events within our own lived experiences. It also provides a context for the populist emergence (and indeed criticism) of "Fake News". Fake news, however, is not in itself a recent phenomenon. Previously, writers (Borden, S.L. and Tew, C., 2007) have examined the role of the journalist and the performance of journalism and drew some ethical lessons from fake news within a singular context.

Tambini (Tambini, D. 2017) argues that the term ‘fake news’ is ill-defined. Policymakers should be aware that the term has been used to serve the purposes of various political actors. He claims that some fake news problems do require action on the part of policymakers as well as media and tech companies, but the approach must be cautious, proportionate and protect free speech. In a small number of cases, deliberately misleading ‘news’ that attempts to undermine elections could pose a threat to national security. Intermediaries such as Google and Facebook may be required to take such content down, but in most cases fact checking and monitoring will be sufficient. Recent studies suggest that a majority of citizens (both students and adults) lack the capacity to correctly differentiate fake news from verified content. Digital advertising revenue fuels fake news, and market mechanisms can be encouraged to

respond to this problem. Legitimate news sources, including critical voices, may be protected from interference by state bodies and also from threat, intimidation and exclusion from news gathering opportunities such as news conferences. The appropriate policy response may be to encourage critical media literacy, self-regulation by platforms, and targeted enforcement in the very few cases that are threats to national security. New fines and changes in liability might not be required, and Tambini argues persuasively that “legitimate” media should be protected from accusations of ‘fake news’.

Revisiting Lyotard’s “Post-Modern Condition” (Lyotard, J-F, 1979) in the context of recent technology sheds some useful light on the post-truth world of the late 2010s. Lyotard asked how we might define ‘knowledge’ in a post-enlightenment world equipped with new media, synchronous communication technologies and universal access to information. He examined the control of information transmission and how it can be legitimated. He also discussed how knowledge is moving from being an end in itself to become a commodity meant to be repackaged and redistributed by digital means. By equating knowledge with power (as it has always been) Lyotard accurately predicted that in an increasingly networked world, those with the capability to control and manipulate large quantities of data and reimagine it to give it new meaning, will become increasingly powerful. These users have become paradoxically, often both the purveyors and the critics of fake news.

The control and the repackaging of social data is developing into a significant tool or weapon of social and political power, and is a key ingredient in the manufacture of fake news. Knowledge is shaped by both power and politics and Lyotard compared its legitimation both in politics and in science. Both fields are dominated by traditional authority figures who determine the legitimacy of claims and statements. However, he also asks that in an increasingly computerised society whether it is becoming problematic to determine who it is who authorises the authority figures. He claims that in order to understand the character of knowledge, we must understand the concepts and operations of our society. He says that postmodern society may be viewed as being either cohesive and unified, or dissonant, where the priorities of people and the functions of the system are incompatible. In both cases, he identifies society as being a machine, with knowledge being an integral part of the system that keeps it operating. Social media, and the knowledge and “fake news” they generate are yet another component of this “machine”. Both cohesion and

dissonance are apparent in their workings. They are another manifestation of the distortion machine.

First published in 1962, following his coining of the phrase "the medium is the message", Marshall McLuhan described how technologies are not just inventions which people use but are the means by which people are re-invented. Although he was talking predominantly about the printing press, this concept can be extrapolated to the digital media with their ability to reproduce written language swiftly and in vast quantities. McLuhan describes language as being the last art to accept the visual logic of Gutenberg technology, and the first to rebound in the electric age (McLuhan, M. et al, 1962). Although he recognised that electronic text production would signal a return to the tribalism and diversity that he saw the invention of the first printing press creating, he also warned of a homogenisation built around Western cultural dominance. In spite of the emergence of social media seeming to encourage diversity and difference, McLuhan predicted a world where cultural diversity would be superficial, the messages controlled by an increasingly smaller group of powerful people with immense digital and demographic resources under their control and the ability to massage the message, until the medium and its message became indistinguishable. In this context, social media can be seen as the ultimate triumph of style over substance with truth and identity constantly being shaped not only by ourselves but by those with power and influence to massage the message. Fake news may also be seen as a by-product of this.

Despite the advancements of the Enlightenment and of the 18th Century, and their emphasis on reason and science as imperatives for authority, we continue as individuals to behave individually and collectively (whether socially or geographically determined) in either irrational ways or in ways which can distort our reasoning. It has been argued persuasively by writers such as Feenberg (Feenberg, A., 1991) that social rationality cannot be explained purely by a model of an idealized version of science. In this context, philosophers such as Jacques Derrida and Jürgen Habermas take opposing views. Derrida, who championed a deconstructive inquiry approach towards language, represents a postmodern viewpoint with his critique of reason. Conversely, Habermas, argued in defense of reason, modernity, and the traditions of the Enlightenment. These conflicting viewpoints not only propose different definitions of 'truth' but dramatically different senses of whether or not 'truth' is a concept that can be defined. The postmodernists and poststructuralists may well have argued that there is no 'truth' and that everything is, in fact fake news. They probably would

have seen the phenomena of social media as a vindication of their philosophical viewpoint.

Alongside this, cognitive dissonance can be seen as a powerful behaviour change agent. Cognitive dissonance occurs when human behaviour contradicts strongly held and embedded opinions, attitudes or morals. It can cause psychological discomfort in ourselves and others and dissipates only when the tensions are resolved and our behaviour and morals are realigned. The problem occurs however, when we deceive ourselves by distorting our interpretation of reality to fit our attitudes and opinions and we effectively sidestep cognitive dissonance. Social media provides us with a convenient, ready-made and easily accessible distortion machine. The apparent objectivity and passivity of the machine can falsify and misrepresent both the behaviour and the opinions of the human. Again, this begs the question of whether technology actually helps or hinders our rationality and whether or not this really matters anyway. It also prompts us to enquire whether ‘technology’ as a concept exists anymore, and to what extent our ontologies have changed in this regard. In the postmodern tradition we could answer that this is all relative. Douglas Adams has (ironically and humorously) developed a set of rules that describe our reactions to technologies:

- “1. Anything that is in the world when you’re born is normal and ordinary and is just a natural part of the way the world works.
2. Anything that's invented between when you’re fifteen and thirty-five is new and exciting and revolutionary and you can probably get a career in it.
3. Anything invented after you're thirty-five is against the natural order of things.” (Adams, D. (2002).

Much of our interaction with digital technology depends upon on our positionality and where we place ourselves with respect to the affordances created and our engagement with the information presented. Vint Cerf (Cerf, V.G., 2001) recognises that as well being an agent of freedom, the internet delivers fake news and unverified opinion very efficiently. He sees the thoughtful and the thoughtless as co-existing in digital spaces with the only tool that we have to combat this being critical thinking. Although this is something with which most people would agree (possibly excepting those with a vested interest in the promulgation of fake news), we are still often driven by the subjective and the irrational, even when we are engaged in what we believe is critical thinking and convince ourselves that we are being objective.