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RESEARCH

Digitization and the Shaping of Society – A Soft Systems Study

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Abstract
The ubiquity of communication technologies has influenced the way we receive and process 'information'. It is shaping the way that human societies interact and made it to distinguish between tittle-tattle and facts. Despite its many benefits it can also lead to social disengagement where 'data' is treated as information and 'news' can be untrue. In this paper I investigate if digitization is changing the nature of society and the way we behave. Using a Soft systems method, I explore the impact that digitization is having upon society and discuss the lessons learnt. The suggestion is made that using soft ideas might help receivers to gain a better appreciation of the material they access within the context in which it is expressed.

Keywords Appreciative Inquiry Method · Digitalisation · Soft Systems

The Structure of the Paper

The paper provides an example of how soft systems inquiry can be used to gain understanding of the influence that digitization is having upon society. Broadly speaking, I use a soft method to investigate if digitization shaping public opinion. To do this the paper is broken into four parts. First, I reflect upon digitization and its influence upon society, second, I give a short discussion of *Soft* systems thinking and practice and a description of the soft method used in the investigation and, finally, I reflect upon what was highlighted by the approach and also upon the usefulness of the method applied.

Introduction – Data is not Information

The epithet '*information*' age is misleading. More correctly it is the age of big data and data processing. We are bombarded with data from all kinds of sources that is packaged in such a way that we refer to it as information. Such an assumption can be unsafe. While

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there is no doubt that there is, on the web, data packaged in such a way to be of personal benefit it is easy to become overwhelmed without being able to discriminate between tittle-tattle and substance. To 'find out' about something is not a trivial task. Undertaking an investigation into the complexity of social communications is a case in point. It is important we should be aware that our 'appreciation' of a situation itself is not free from the influences of the 'community' to which we belong.

'Information' gained through social media or Zoom type communications restricts our appreciation of the whole because of the way it is presented. Digitisation has enabled a fantasy world to be created and tailored to individual personal choices (e.g., Cinelli et al. (2021). These 'artificial' communication systems deny access to the non-verbal cues that develop through informal conversations. It seems to lack the opportunity for the receiver to learn what motivates the sender and why they view a situation in a particular way. It is easy to influence the way participants react to situations. An example of this is the misinformation[1] spread during the recent Covid-19 pandemic (Salam 2021). To investigate this further I consider the question, '*what impact is digital communication having upon public opinion?* and to do this I use a soft method of inquiry. First, I provide a short summary of soft systems thinking and practice.

Soft Systems Thinking

Soft Systems was a term used to describe a 'new' systems approach to inquiry (see Checkland 1989, Flood and Jackson 1991, pp.171–178 and Stowell and Welch 2012, pp's 112–118). It was given a degree of legitimacy with its association of the philosophy of Husserl and the sociology of Schutz (Checkland 1999, pp's.277–281). These ideas were a departure from the traditional reductionist approach to organisational inquiry by recognising the importance of subjectivity and, by implication, the equivocality surrounding any inquiry. It is a function of the knower and the known and is dependent upon a multiplicity of factors (for a useful discussion see Bertalanffy 1968, p.xxi). As Checkland pointed out *'… Given the nature of human beings it will be the case that we are concerned not with 'problems' but with 'perceptions of problems' – and of course a wide variety of perceptions will be possible…'* (Checkland 1999, p.238).

'Systems' thinking emphasises that the properties of the whole cannot be understood by reducing it to an analysis of its parts. There is an interconnection of networks (and different perspectives) from which a 'shape' emerges that allows each observer to identify it as a system (e.g., Capra 2003, pp's 116–119). Soft systems ideas highlight the importance of subjectivity and how personal experience shapes the way that we make sense of 'our' world. To this end we can say that a system is an intellectual construct and what it is, is dependent upon each 'inhabitants' interpretation.

The relationship of soft inquiry to other methods of intellectual paradigms is adapted from Burrell and Morgan's (2005) and summarised in Fig. 1. On the vertical axis Radical change and Regulation and on the horizontal axis, Subjectivity and Objectivity. As a guide to the perspective taken in this paper I show 'soft systems' in the Subjective/

[1] The vast majority of Covid-19 anti-vaccine misinformation and conspiracy theories originated from just 12 people who have a combined following of 59 million people across multiple social media platforms, with Facebook having the largest impact – see Salam 2021.

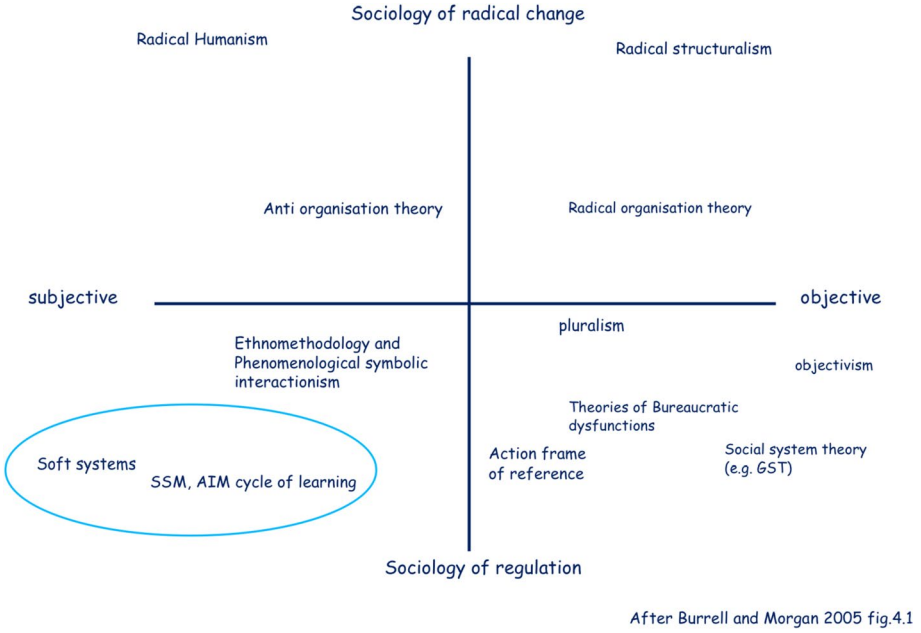

Fig. 1 Sociological Paradigms and Organisational Inquiry (Burrell and Morgan)

Sociology of Regulation quadrant to emphasize this perspective. This is juxtaposed in the bottom right-hand quadrant, with other methods of organisational inquiry.

It is fundamental to the choice of inquiry used in this study that it should be 'agnostic' to the situation of interest. This is an acknowledgement that each of us has a limited knowledge of any situation, and we are often a 'prisoner' of our background. Any approach used should not start by taking the 'problem' as given to allow the inquirer to explore the situation of interest with an open mind. These ideas when coupled with Vickers notion of the Appreciative Systems[2] laid the basis for the development of an application of the ideas of what became known as Soft Systems Methodology (SSM).

Systems Practice

While models provide the theorists with a means of depicting organizational behavior 'real world' experience of applying these models is not always as successful as the models predicted, exposing a division between practice and theory. The difficulty reductionist models have is that social groups are complex and do not always behave as anticipated. They cannot be easily modelled and inquiry based on the methods of science for such complexity are deficient (e.g. Nonaka and Toyama 2007; Checkland and Holwell 1998, pp's.9–10). The measurement of success between theory and practice are rarely the same particularly if the theory is not enriched by the lessons from the practice. This raises the difficulty of producing

[2] Vickers (1983b, p.69) describes as '*…the inner history of an individual, an organisation and society…*'.

an approach to 'finding out' that embraces 'subjectivity' yet asks its findings be accepted as serious outcomes. We must ask ourselves are such outcomes the opinion of the inquirer and nothing more than an anecdotal report? Churchman reminds us to recognize *'…the distinction between personal knowledge and community knowledge into the design of inquirers.'* (Churchman, 1971, p.154). A problem for an inquirer then, reductionist or otherwise, is to acknowledge the impact of their intellectual background upon the investigation. In soft systems the activities and the intellectual basis upon which the study was undertaken should be clear enough that an interested party can follow the process.[3]

Undertaking an Inquiry

The Appreciative Inquiry Method (AIM) has been developed from the experience gained from applying soft systems ideas in practice. AIM is based upon the same intellectual underpinnings as SSM (Stowell 2021) but it approaches the situation of interest in a slightly different way. It starts from an agreed question or issue to be investigated. The prime outcome remains the same, that is of gaining understanding rather than solving a perceived problem.

To address a criticism that a soft systems approach lacks objectivity and rigour the inquirer should declare, in advance, their framework of ideas and the inquiry should be recoverable by a third party. A simple check is in the form of F, M, A (Checkland and Holwell 1998, pp's.9–11). A stands for the area of interest, F for the framework of ideas upon which the inquiry is based, and M the method used to undertake that inquiry. There should be a synergistic relationship between F and M.

It is axiomatic that any attempt to gain understanding about a situation of interest should be by engaging with the situation and with those that give it its existence. Clearly this could become unmanageable, so boundaries must be drawn (e.g., Midgley 2000, pp's.36–38; Ulrich 1994, pp's.190–191).

To help think where a boundary can be drawn it is necessary to think about what the 'system' is that the inquirer wishes to explore to provide some focus. Naming the system will help eliminate others and make a formal declaration of what it is the inquirer is exploring. We have found that the mnemonic PEArL (e.g., Champion and Stowell 2001; Hart 2014; Stowell and Kramarova 2022) has proved helpful in considering what/who should be inside and what/who should be outside the boundary. The mnemonic PEArL (Table 1) also helps provide context and reflection about the inquiry.

The Inquiry

For this study the area of interest (A) was to explore the apparent association of digital technology and the spread of disinformation. To provide me with source material I used Google, Safari and Duck-Duck-Go search engines. Academic papers, public and commercial reports were downloaded, and key points surfaced to add richness to the *picture*. My framework of ideas (F) is based upon soft systems and my method of inquiry (M) is the

[3] For a discussion see Churchman chapter 6 and especially p.156; Checkland 1999, pp's. A39-40; Checkland and Poulter 2006, p.177).

Table 1 PEArL

P Participants	Who is Involved in the activity, Why are they involved? What is their role in the activity? Who is excluded and why?
E- Engagement;	How are the participants involved? What methods are used to engage participants? What are the environmental influences in which an activity takes place?
A- Authority; Formal authority associated with activity.	What are the environmental influences? What embedded authority do the tools for engagement have? Why were they chosen? and what influences the outcomes?
r- relationships;	What kind of informal power or commodities (Stowell 2014, Stowell and Welch 2012, pp.116–118) do people use to influence others (Examples include the use of gender, sociability, and verbal skills)
L - Learning:	Participants will have gained, individually, from being made aware of the perspective of others. The active process of engaging in discussion may engender an 'appreciation' of the possibilities and constraints within a situation. Any agreed intervention [or non-intervention] into the situation would reflect the transformation.

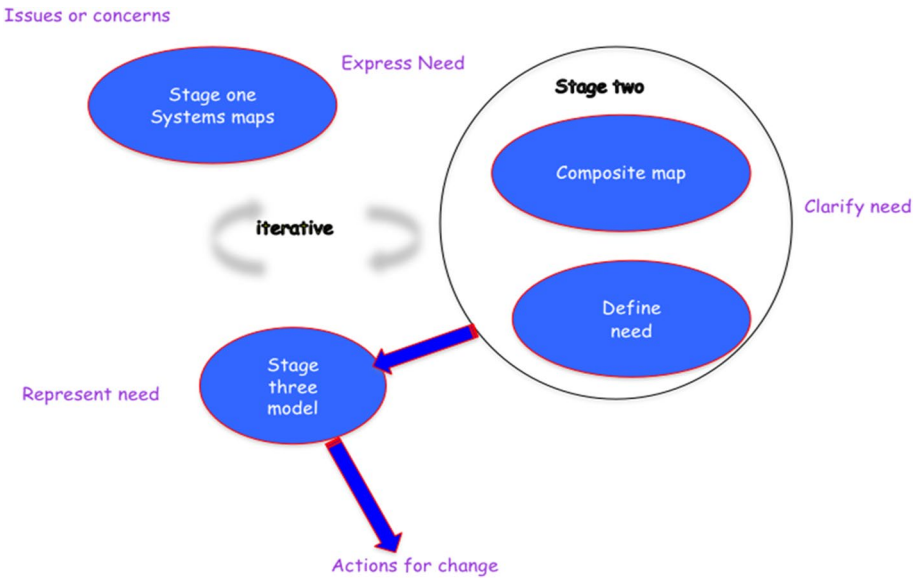

Fig. 2 Outline Diagram of AIM

Appreciative Inquiry Method (AIM[4] see Stowell 2021; Stowell and Kramarova 2022; Hart 2014). My boundary is guided by PEArL but because of the practicalities the search will be confined to accessing source material from the UK and USA.

An outline of AIM is shown (Fig. 2) which is followed by a summary of what emerged at each stage.

[4] AIM should not be confused with AI, a management tool with a similar name, developed by Cooperrider and Srivastva (1987).

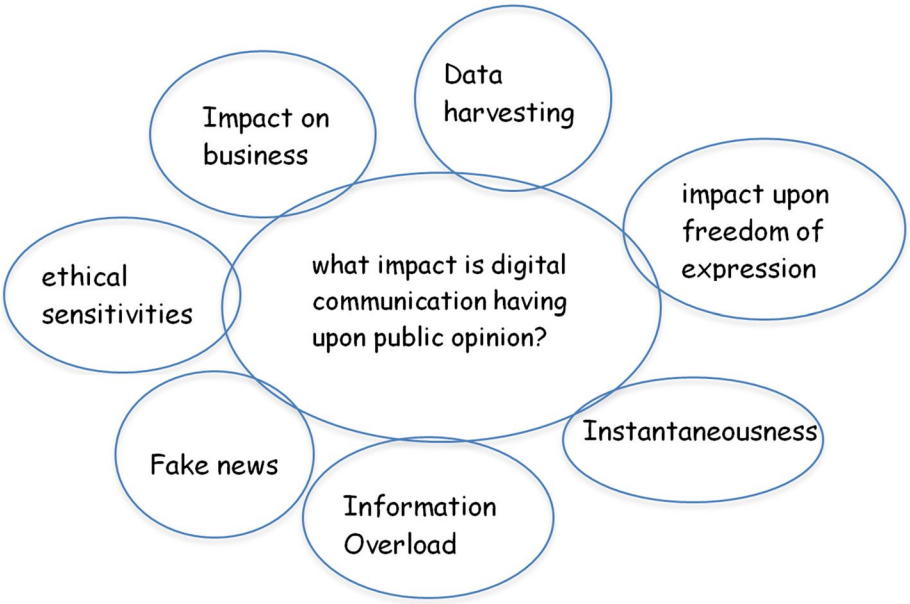

Fig. 3 Systems Map of literature research

In stage one of AIM a Systems map of *what is the case* is produced (Fig. 3). The question explored is *'what impact is digital communication having upon public opinion.?* The circles and their contents were the result of the inquirers appreciation of the material downloaded and analysed. For this paper and to help the reader appreciate the process I expand upon the reasons for including each of the 7 headings and what is meant by each of the sub-systems. Opinions and concerns expressed, in narrative form about the impact of digital communication in forming public opinion. The written narrative is unnecessary in a 'real world' study as the maps provide the basis for discussion (see Stowell 2021). The circles around the centre of the Systems Map shown in Fig. 3 represent what '*is*' the case suggested from the material accessed. When developing systems maps of a situation of interest we distinguish between 'what is the case' and 'what ought to be the case' (see Vickers 1983a, b, p71). This research and the following maps are of 'what is the case'.

I begin with the subsystems that seem relevant to my opening paragraph in which I raise the concern: is digitization shaping public opinion? To that end it is appropriate that I begin with 'Fake News'.

(i) The emergence of Fake News

Technological developments have become a prime means of social communication and the source of information for many. News is communicated from a single source, often a via cell phone,[5] and a rise of misinformation repeated on social media platforms. Cinelli et al. (2021) refer to such sites as echo chambers. They write, *'…Users tend to acquire*

[5] According to a Pew Research Service study from January, more than eight-in-ten U.S. adults (86 percent) said they get their news from a smartphone.

information they like, filter out information they do not, and join groups of like-minded peers around a shared narrative called echo chambers'. Erokhin et al. tell us that people were searching and exchanging uncorroborated and unvalidated '*information*' about Covid-19 resulting in '*…a real infodemic*' (Erokhim et al. 2022). Pelfrey, in an article in Forbes, writes, that '*…Bad information comes in two flavors, unintentional and intentional. The latter, intentional disinformation, is far more dangerous*', (Pelfrey 2021). The article continues that the more outrageous the content the more people interact, is good for business (Suciu 2021).

In May[6] there were a reported 77 attacks on U.K. phone masts and cell tower employees, demonstrating the malevolent power of social media. Recent concerns were about the pandemic and the virus Covid-19, but what we learnt about it came from a variety of sources, some potentially dangerous, e.g., groups on social media were combining to resist taking a vaccine because 'they' say it is about making huge profits.[7] There are also examples of misinformation being used to influence the way its users think about situation such as elections, the pandemic[8] and so on (e.g., Visconference, 2019). Where there are conflicting opinions, it is easy to ignore both or opt to one that seems to coincide with your feelings. It is reported that some sources of dubious creditability, and some state controlled, use the media to undermine stability and boost their own credibility. Foreign powers use the medium to spread alarm[9] as a means of creating unrest and disturbance. This underlines the importance of being aware of the viewpoint that is embedded within the 'information'; it is not neutral. Does a 280-character message on twitter carry the same weight as a half-page article in a newspaper? Less than 10% of 'tweets' hit the character limit, most are around the 33 words average, which suggests the receivers and the sender have a similar understanding of the subject matter; there is no debate (Mintzer 2020). Being overwhelmed with data increases the chances of adopting the quick fix, the easy way to move on to something more pressing.

(ii) Information' Overload -compounding the problem.

Information overload is defined as a situation where an individual receives too much information at one time and cannot think about it in a clear way (Cambridge dictionary, 2020). It is caused by the struggle of managing the volume of information from multiple sources. This coupled with a scarcity of time, makes it difficult to make an informed judgement. In our digitized world we are subjected to 24/7 technology and rolling broadcasts on TV. Social media is full of material, much of it is unchecked, (Mintzer 2020).

[6] See: https://www.pymnts.com/news/retail/2020/pandemic-and-conspiracy-theories-delay-5g-at-retail/

[7] See: https://www.politifact.com/factchecks/2020/may/14/facebook-posts/no-evidence-gates-foundation-will-profit-coronavir/ and -https://www.gov.uk/government/news/uk-steps-up-fight-against-fake-news

[8] The vast majority of Covid-19 anti-vaccine misinformation and conspiracy theories originated from just 12 people who have a combined following of 59 million people across multiple social media platforms, with Facebook having the largest impact – see Salam, (2021)

[9] E.g., see https://www.nytimes.com/2019/09/26/technology/government-disinformation-cyber-troops.htmlThe World Economic Forum (WEF) invited its 1,500 council members to identify top trends facing the world. The WEF consists of 80 councils covering a wide range of issues including social media. In tenth place was a concern over the rapid spread of misinformation online, specifically social media's role in this. (https://theconversation.com/hard-evidence-how-does-false-information-spread-online-25567).

'Information' from too many sources makes it difficult to analyse and understand the message itself resulting in confusion rather than better understanding. Individuals are often left in a state of bewilderment through their excessive consumption of the data that is available to them with little time to critically evaluate it.[10] We are overwhelmed by a tsunami of 'information', mobile telephone, tablet, TV, radio, other people, newspapers and so on, each wave interpreted by the receiver as it arrives in a variety of ways. Tagliabue et al (2020) report that during the Covid-19 pandemic '*…People were so overwhelmed by this flood of information that they did not have time to understand it correctly. The massive presence in the mass media of doctors who expressed their opinions, sometimes not supported by scientific evidence, could be interpreted as a desire to appear rather than the need to provide the correct indications.'*. There is no time for debate.

(iii) Instantaneousness—'compulsive internet use'

Users of all types of digital devices are overwhelmed with 'information' in all its forms each day. Information overload prevents individuals from thinking about what they receive in a rational way (e.g., Cinelli et al. 2021, Tagliabue et al 2020). Individuals attempt to respond to find instant answers to every aspect of modern life that has developed, this is referred to as 'instantaneousness' (e.g., Salam 2021; Mintzer 2020). This has arisen because of the desire to respond in some way to every event and has resulted in many experiencing a state of information overload, meaning there is insufficient time to consider critically what has been received. In a report by the EPRS the continuous use of the internet is referred to as 'problematic internet use' or 'compulsive internet use' (Ainin et al. 2017). This is where the individual has the inability *'…to control their use of the internet, which causes distress and some functional impairments in their daily life.*' (Shek et al. 2013; Yao and Zhong 2014) The report refers to this as a form of addiction as it interferes with the individual's ability to pursue life independently and a threat to wellbeing (Jin and Spence 2016). According to this understanding such excess leads to a loss of freedom and form of enslavement. Individuals have no control over their behaviour (EPRS 2019, p.19).

(iv) Digital technology and its Impact Upon Freedom

Digital technology has enabled us to develop networks of contacts created from a common interest. We can easily find someone who is willing to communicate on any subject from the flat earth society to cells of people that want to do harm. Each cell becomes their 'real world' (e.g., Cinelli et al 2022). It allows us to reinforce our prejudices.[11]

The move from cash to digital transactions may be convenient but is another loss of freedom. In the UK even the purchase of something costing a few pounds[12] means giving up personal details that can be manipulated and controlled by the major digital processing that exists today. (see the recent disclosures by Ms Haugen (2021), ex-Facebook product director, Makortoff 2023). Paying digitally leaves a footprint that is easily monitored (see, BBC, 2023; Morgan Stanley 2022).

[10] See: Mintzer, Paying Attention: The Attention Economy, 2020, https://econreview.berkeley.edu/paying-attention-the-attention-economy/

[11] An example of this is Hilary McGrady (2022), director-general of the National Trust said her members were "outraged and worried" about the threat posed by the new government's policies. This assertion is not supported with evidence that its members were contacted.

[12] Personal experience found that Santander has introduced a scheme whereby the account holder has to state the reason for transfer of money even for transfers of less than £50.

In recent times several data brokers have been accused of breaking EU privacy rules (e.g., Scott and Manancourt 2020; Newcomb, 2018) and collecting data to build detailed profiles such as sexual orientation, health status and religious beliefs. Application Programming Interface allows the developer to talk to the users' software in a controlled way. While company's such as Meta exercise control over how the data is accessed and controls the harvesting of data that is not on public record, these 'controls' are not watertight and ways can be found to circumnavigate them e.g., Cambridge Analytica.[13] These sources of data are also hacked or leaked and doubtless 'sold' illegally (for examples see Ellis 2018; Cronan 2019). This brings into focus the ethicality and control of the way in which date is used.

(v) Ethical Sensitivities

In a paper, written by Marr (2022), says that alongside the positives of the Metaverse such as improved health care and benefits to education he lists the challenges we face in this unreal world. These include threats to our privacy as it will collect the personal data of all its users. He suggests that there will be a new 'class system' arising out of those that can access and manipulate the technology in its various forms and those that cannot. The ethical distinctions between the virtual world and the 'real world' become blurred Marr says. An interview with Bejar, a former Facebook employee and consultant for Instagram, reports half the users of Instagram has (at the time of the interview) had a bad experience in the last seven days, yet the vast majority of negative experiences do not break the rules (Field 2023).

The influence and power of digitisation over our existence is removing us from natural experience. We substitute natural interaction with other humans for a reality provided by various platforms of digitisation. We view the natural environment through the lens of digital technology and for many it is something 'out there', to be experienced occasionally on holiday. Endangered species are seen through the lens of a charitable cause. Our responsibility to our environment is sub-contracted to a third party (e.g., What is Waste? Stowell, A., 2011, pps.40–45).

These digital platforms also harvest personal data without control or agreement (e.g., TikTok, see Touma 2022; Williams 2021). It is collected from such things as facial recognition through to knowing what products interest you through your on-line enquiries. These platforms are controlled by separate algorithms created and merged into part of a whole, without proper control. For example, the data provided by our health monitoring devices such as a Fitbit (now owned by Google), is used in ways to which we did not agree. Not just product placement but health matters too. We now have devices in our homes that are collecting as much data on us as it is benefitting us. Knowledge gained from such devices as Amazon's *Alexa* and Google's *Home* provide useful guidance on things such as home security, but they also keep track of the way we use the device. Data such as what you watch/listen to/what time you do this and so on could be used as part of a marketing programme (see Day 2019 for an interesting discussion). We are doing this willingly with blind trust that it will not be harmful. An outcome of this is we might find that we are linked to products and sites that we did not knowingly sign up to and there is the ever presence of identity theft (e.g., Irshad and Soomro 2018.) Just keeping pace with the

[13] According to the Edelman barometer after the Cambridge Analytica scandal, 76% of people worry that fake news is being used as a weapon to polarize and radicalize. (see https://www.edelman.com/sites/g/files/aatuss191/files/2020-02/2020%20Edelman%20Trust%20Barometer%20Tech%20Sector%20Report_1.pdf

consequences of our digital world is challenging and can lead to information overload and, de facto, failure of critical evaluation of what we read.

Finally, the research highlights the way in which digital communication is affecting business organisation, social communities and the structure of our high-street.

(vi) Impact on business

The way citizens view business has changed and with it working patterns which in turn has an impact upon the social communities, business and on the high street shopping centres that they once supported (e.g., Rangaswamy et al 2022; Reinartz, et al. 2019). Digital communication is shaping attitudes to business – e.g., working from home, shorter working week and on-line shopping. For example, on-line shopping has had a major impact on the high street resulting in the closure of many stores and loss of jobs[14] (e.g., West 2022). This has created a changing pattern of interaction between the buying public and the structure of organisation itself. Capra has suggested that organisational structure is formed around information, power and wealth. He points out that *'The economic environment in which organisations have to operate are not isolated but are…the consequences of the 'new economy' that has become the critical context of our social and organisational life*. Digital technology has, unwittingly and unexpectantly, accelerated rapid and uncontrolled supply side reform creating social discontent as many well-known businesses fail, creating unrest in the public and as well as job prospects and loss of skills. He says that '*… the systemic understanding of life makes it clear in the coming years such a change will be imperative…'* (Capra 2003, p.112).

Lessons Learnt about Digitisation and the Shaping of Society

First, this discussion arises from the first stage of AIM – 'what IS the case'. Second, it was undertaken by the investigator and material used was also downloaded by the author. Unscientific, but this stage of AIM starts the process of developing an *Appreciation* of the situation of interest. In this respect the study has achieved its purpose. The study is also a reminder the nature of any investigation. As Bertalanffy pointed out our perception is based upon our personal experiences and psychophysical organisation (ibid, 1973, p.249). This is often overlooked in the hurry for 'truth' (instantaneousness). What is found is often accepted without reflecting that what is said or presented is subjective.

This inquiry suggests that assumptions are often made that what is broadcast is 'real' and what we read is fact. The knock-on effect of this when faced by the tsunami of opinions is the possibility that we will select those views that coincide with our own. '*… the formation of an outlook in which everything was approached through the medium of set responses and automatic reactions; people knew what they were supposed to say, but they no longer attached any real significance to the words used.*' Kierkegaard (2000) see Gardiner 2002, p.39). In this respect it can influence the way that society responds. Our *reality* is formed by sensation and fashioned by experience, it is not exclusively a process of thought, (although this may shape how we process our experience), for us the world exists as the result of subjective appreciation. We regurgitate what was said last time, but the

[14] Developments in digital technology and the growth in online retail have completely transformed how people shop. Between 2006 and 2019, as we are all aware, online retail increased from around 7% to 19% of the market, while physical shops lost 13% of their market' (West 2022).

instantaneousness baked into digital communication can stifle critical evaluation and give credence to ill thought-out ideas It is distributed every millisecond on a variety of topics; too much for any individual to fully comprehend and is so easy to repeat an opinion if there are enough others sharing it (echo chambers). The pilot study shows that the main drivers of misinformation are the social media platforms that support vast amounts of data, often uncorroborated, that is accepted and treated as *information* by the users, who should know better (e.g., Tagliabue et al 2020). 'Opinion' is easily accessed.

Our high- street is changing because information technology has made it easier to do our shopping from home, impacting not just by making physical buildings redundant but affecting the social interaction that is part of shopping too.

This pilot exercise has demonstrated that it is possible to use a soft method of inquiry to gain insight into complex issues such as the digital revolution. It provides the possibility of looking at this problematic development in human interaction holistically. I do not claim this to be a definitive study, but the outcome of stage one of AIM reveals several similarities to the findings of an extensive study by the European Parliamentary Research Service (2019). Their report lists eight Harmful social and cultural effects associated with internet use:

- Internet addiction;
- Harm to cognitive development;
- Information overload;
- Harmful effects on knowledge and belief;
- Harm to public/private boundaries;
- Harm to social relationships;
- Harm to communities;
- Harm to democracy and democratic citizenship.

Summary and Conclusion

Reflecting upon what has been learnt it seems that digitization is influencing and shaping society. Digitalisation influences how we make sense of the world and to an increasing degree defines both economic and social order. Albeit of direct benefit to human existence technological developments are creating a gap between technocracy and nature (the Anthropocene epoch[15]). The algorithms with which devices are encoded are not programmed to consider the wider aspects of the situation they represent the programmer's agenda.[16] This lack of the wider perspective adds credence to the somewhat depressing perspective of writers such as McKibben (1989) who suggested the Anthropocene age is the 'end of nature', a separation of the natural order of things and the digital age. While this view may not be shared by all it does underline the differentiation between human activities supported by digital technology and human interaction in the natural world (e.g.

[15] The Anthropocene Epoch is an unofficial unit of geologic time, used to describe the most recent period in Earth's history when human activity started to have a significant impact on the planet's climate and ecosystems.

[16] An example of this is the development of robots to recycle waste. Laser and Stowell point out while robots can reduce the impact of waste disposal upon the natural environment *'…These robots, however, take a particular perspective on mobile phones they are said to recycle; they value the materials in a specific form'* (Laser and Stowell, 2020). The robots are programmed to identify the materials contained within the device, but they do not take into account the impact upon the wider 'system'.

Jin and Spence 2016). Evidence for this shows itself in the pilot study from Fake News to its impact upon the Highstreet. It is not yet clear what the new world will look like, or if we are aware of its effects but, increasingly, we view the world through the prism of digital technology. Our 'being' is a function of the experience of things in which we are immersed. We try to make sense of the stream of sensations that surrounds us (the 'hum'); we choose to absorb some things rather than others.[17] We should ask ourselves how a digitised world is shaping our reality.[18]

In the natural world we learn to appreciate a situation through social intercourse and the basis of this is language and empathy. The digitised world is creating an environment in its own image. The (your) real world has checks and balances on our imagination which help shape the way we adapt to our surroundings; the virtual world has no such checks and balances. It is seducing us, especially the young, to believe that human existence is tractable. 'un-reality' is an airbrush away (Knowles 2023).

Soft systems practitioners are concerned with gaining understanding of our imagined and 'real' experiences and how this shapes our perception of the world rather than seek a scientific interpretation.[19] '*Science has no adequate way of studying the elusive, since it always aims for precision, and hence in some real sense science is alienated from nature* (Churchman 1971, p.18). We learn about the world, by experiencing 'things', which provides us with a way of making sense of them. Digitization denies us this basic human activity, it removes us from the real world by encouraging us to inhabit one that accords with our limited perceptions. Digitization is creating a fantasy world and changing the nature of society and the way we behave. The dominance of reductionism across disciplines has led to the unintended consequences of many accepting that *information* that is circulated through digital platforms to be fact, when it is often not the case. This, coupled with information overload, has created the climate for disharmony as different viewpoints become *facts* lost in a cloud of inconsistencies. By embracing soft systems ideas may be a way of adding context and value to the volume of 'information' we receive and counteract being overwhelmed.

While the prime purpose of this paper was to explore the general question about the effects of digitization on society it has also provided an example of the way that soft systems ideas can be used to explore complex issues.

Epilogue

The study has been undertaken such that it is possible for a third party to 'recover' the path the inquirer followed. The pilot study has produced a 'picture' of the situation of interest and from this provided a summary of the concerns raised by the different correspondents and authors referenced in this paper. My conclusion is that an antidote to this kind of thinking is to adopt a holistic approach which will provide intellectual tools for inquirers to

[17] The notion of Epiphenomenalism asserts that mental states or events caused by physical states or events in the brain do not themselves cause anything to happen. e.g., see https://iep.utm.edu/epipheno/#H2

[18] The paradox is how can we believe that the world exists as a function of our imagination and the same time experience its existence?

[19] Winograd and Flores point out that science is …the very paradigm of what it means to think and be intelligent' 1987, p.16.

consider events within context. (e.g., Stowell and Kramarova 2022; Hart 2014; Checkland and Poulter 2006, pp's.35–38.).

It is appropriate to end with a quotation from Vickers who, in 1983, wrote, '…*men and their cultures are profoundly influenced by the tools they use. In this sense technology is not and can never be neutral. It shapes users minds and habits; it limits as well as enlarges*' (Vickers , 1983b, p.8).

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