LSE Media and Communications

Media@LSE MSc Dissertation Series

Editors: Bart Cammaerts and Lisa Derand

Calculating newsworthiness

Investigating the role that probability plays in newsification and journalistic decision-making

Selina Swift

Published by Media@LSE, London School of Economics and Political Science ("LSE"), Houghton Street, London WC2A 2AE. The LSE is a School of the University of London. It is a Charity and is incorporated in England as a company limited by guarantee under the Companies Act (Reg number 70527).

ABSTRACT

Despite playing a central role in the newsmaking process, little attention has been paid to how journalists make decisions about the news agenda. This is significant because the media plays a central role in constructing a society's worldview. It then follows that there is a certain level of responsibility surrounding journalistic decisions, therefore, it is important to do more research into this area of newsmaking specifically. In this study, I present a new term called newsification which captures the process of a non-news event becoming news, and I go on to explore the role that probability plays within such. I utilise findings from a survey completed by journalists from a range of UK news organisations (n = 50). The survey included a story selection exercise which operated as a thought experiment to identify how journalists make probabilistic calculations about the likelihood of running certain stories under different contexts. I argue that this decision-making process surrounding newsworthiness can be likened to Bayesian reasoning, whereby the agent updates their beliefs continuously, as new evidence comes in. The following analysis discusses journalistic-decision making, both in light of the experiment, and in general. A discussion about the morality within these decision-making processes follows before the implications of this research are discussed. The research concludes by offering a practical framework for news organisations and journalists to identify and re-evaluate their own individual 'news formula' which I argue is important for the purposes of journalistic innovation and sustainability.

Calculating newsworthiness: Investigating the role that probability plays in newsification and journalistic decision-making

Selina Swift

INTRODUCTION

> For better and for worse, the media do in fact constitute the world's publicness - there is, arguably, no other - and therefore it behoves us to interrogate what kind of publicness this is, what its strengths and weaknesses are, what its consequences might be, what its responsibilities, and what might be changed.
>
> Roger Silverstone [1]

Millions of events happen every day of our lives across the world. However, only a minute percentage of all of those worldly happenings make it onto the news. It is of course (currently) impossible to record every single causal event that happens. However, even if it were possible, the news would still be very unlikely to report every single event that has happened over time. It is clear therefore that not all events in the news industry are equal. A selection process which applies news values to different events determines whether they are newsworthy. This leads to the emergence of a hierarchy of events, with only the most important, interesting, and relevant events able to change their status from 'non-news' to news. Alongside this, the nature of the news cycle means that these 'news events' will inevitably change back to being 'non-news events' within a matter of time.

This provokes the central question of this enquiry: when does news become *news*? The task of assigning news values to events is what is generally considered to be the process of identifying something as newsworthy. Using a philosophical approach, I explore this deceivingly simple question. There has been an ample amount of academic attention paid to the general question,

[1] Silverstone. R., (2007). Mediapolis or the Space of Appearance. *Media and Morality: On the Rise of the Mediapolis*. Polity: Cambridge. p29.

'what is news?' as well as many studies exploring the news agenda in general. However, little attention has been paid to the specific process of an event gaining newsworthiness, and the journalistic decision-making that occurs within such. As a result of this discrepancy, I identify an opportunity to bridge a semantic gap surrounding the process of events gaining newsworthiness by suggesting a new term called '*newsification*'. I then go on to test my hypothesis that probability plays a significant role within journalistic decision-making and newsification via a survey. Additionally, I make a case for how there is an opportunity to look at news agenda decisions under a different framework using a 'news formula'.

The significance of this research is underpinned by the view that the decisions that journalists make are socially significant, and that with this kind of power comes responsibility. This view is grounded in Roger Silverstone's (2007) conception of the mediapolis, which highlights the way in which media shapes the public domain. His work is highly relevant for this discussion as the subjective and value-laden process of assigning news value can have a direct or indirect impact on a public arena. Therefore, it is important to highlight the moral responsibility that comes with making decisions as a journalist. This research comes at an interesting time in the media sphere, since in recent years there has been a strong emphasis on representation in the media. Arguably, the process of assigning newsworthiness has been under scrutiny for some time. This research attempts to formally investigate this process.

The main aim of this research is to be able to provide a new framework for journalistic decision-making that is widely applicable to any news organisation and news format. While it is rooted in a philosophical analysis of news principle, it is important to me that this research is representative-of rather than speculative-about what actually happens in newsrooms. This is why I have opted to recruit working journalists for my survey since this avoids 'armchair philosophy', or more relevantly, 'armchair media and communication studies'. The potential contribution this research could make is that news organisations could use the framework I aim to produce as a tool when re-evaluating their news strategy. The news industry needs to innovate, and a new framework can push news organisations out of their comfort zone.

Additionally, I endeavour for this research to provide a way for news organisations to better assess the voices they are including and excluding. Silverstone concludes that journalists are not the right people to make decisions about what a society needs to know. I will argue that findings from my experiment show why this is increasingly a lesser cause for concern than Silverstone originally thought.

A further implication of this research is the potential it has to add to the development of artificial intelligence within the field of journalism. While the study highlights the subjectivity of an individual journalist's news decisions, it reveals that there would be scope to quantify the kinds of decisions that a news organisation might be likely to make. This could lead to interesting innovations that utilise AI in journalism. For example, an automated news story suggestion tool could be developed which offers unique story options and angles according to an individual news organisation's values.

Before I proceed, there are some clarifications I would like to highlight. Firstly, this research focuses on the UK news environment, which operates within a democratic society. However, it does aim to construct a framework that would be applicable for any kind of news media and societal structure around the globe. I also follow Silverstone's deliberately inclusive conception of the word 'media' whereby it includes media at the mass, globalised, regional, national, local, personal levels. As well as all formats, such as audio, audio-visual, print, digital, and analogue media, as well as dominant and alternative medias (Silverstone 2007: 5). I use media, news media, and news interchangeably throughout. Additionally, I define a 'journalist' in this research as anyone who is involved in the process of newsmaking, from producers, to editors, to reporters. The line can become blurry, but for the purposes of this paper, I would define a journalist as someone who works out of a newsroom (whether physically or virtually) for a significant percentage of their job. Lastly, it is important to note for transparency that as an active journalist working in TV broadcast news, my research is also informed by my own experiences of working in several newsrooms. I have found this to be of benefit throughout this research as I have been able to test my research hypotheses in a

representative environment when I am making news value decisions in my day-to-day work. I have also been able to informally discuss my research with many of my colleagues to gather a range of views. I believe this gives this research the advantage of being genuinely practical and a reasonably accurate representation of how decisions about newsworthiness are made in newsrooms.

LITERATURE REVIEW

News as a knowledge sharing system

Firstly, I should clarify my philosophical viewpoint of the news media. At its very core, I see news as a knowledge sharing system. The news broadcasts several different kinds of knowledge to a society, such as political, economic, financial, social, moral and so on. Many philosophical questions emerge from the idea of news being a knowledge sharing system, however, two of the most significant for this research are; (a) what kind of knowledge does a society need at any given point in time? And (b) who within society should decide this? These are relevant because the kind of knowledge that gets amplified in the media determines an event's newsworthiness, which, as will be discussed, is socially significant.

It can be argued that the news serves as a sort of anthropological starter kit for how a particular society should think, behave, and act. In *News as a Form of Knowledge*, Robert Park (1940: 669) captures this sentiment, suggesting "exclusive attention to some things inhibits responses to others resulting in a limitation of the range and character of the news to which a society will respond collectively or individually. The function of news is to orient man and society in an actual world." News is of course not the only way an individual learns about the world, and just because something is on the news does not mean the audience will accept it as the ultimate truth. In fact, much of what is broadcast on TV, radio, and online causes audiences to question and debate certain topics. Many broadcasters weave this idea into their mission statements,

whereby they say they aim to present the audience with the facts and information about a story, and allow the audience to make up their own minds about it from there.

The kind of knowledge we gain from news is often combined with our pre-existing knowledge, beliefs, experiences, observations, and ideals and then an opinion of some kind is formed. This sentiment is echoed by Graber whose 1988 paper focuses on how individuals process news information for learning (see also Gunter 2012 and Robinson & Levy 1986). In her study, Graber found that an individual's cognitive framework (schema) determines how they will process various news items. She found an audience will often relate current news stories to previous ones they have learnt about in the media. Using the example of how her respondents reacted to reports of a ceasefire in Lebanon in 1976; "rather than processing the story as part of a schema on problems in the Middle East, the panelists called on their knowledge of ceasefires in Northern Ireland. Since these had not worked well, the panelists reasoned that ceasefires never worked and that they would, therefore, fail in Lebanon, too" (Graber 1988; 131). It is important to note this in order to avoid media-centrism and oversimplifying the impact that news media can have on an audience. But this must be balanced with the recognition that the information and messages the news media communicates to their audiences "define a space that is increasingly mutually referential and reinforcive, and increasingly integrated into the fabric of everyday life" (Silverstone 2007: 5). It is therefore important to recognise the power relations which emerge from news serving as one kind of knowledge sharing system available to a society.

The relationship between news and society

It is widely accepted that the news media plays a role in constructing reality to a certain extent. This is not necessarily a negative thing; as social creatures, humans need to share information with each other in order to survive. In fact, it has been noted in history and anthropological fields that the homo sapien's ability to communicate is likely what helped them outlive their evolutionary cousins (Kochiyama et al. 2018). Dunwoody & Griffin (2011: 180) suggest that "news is a reconstruction - not a reflection - of reality" and that "journalists rely heavily on

environmental cues to signal when news is occuring". The interconnectedness of news and reality has social implications due to the power relations that come with such a relationship. This relates to point (b) highlighted in section 2.0 regarding the relevance of asking *who* is making decisions about what information is being shared with a society. This research will be grounded in the assumption that the decisions that journalists make are socially significant, and it therefore follows that there is a moral responsibility that comes with this.

The relationship between news and the public sphere is one that Roger Silverstone explores heavily in *Media and Morality* (2007). Silverstone presents us with the idea of the mediapolis, which he defines as "the mediated public space where contemporary political life increasingly finds its place, both at national and global levels, and where the materiality of the world is constructed through (principally) electronically communicated public speech and action" (Silverstone, 2007: 31). His work was inspired by the writings of Hannah Arendt and Ulrich Beck. Silverstone grounds the concept of the mediapolis upon Arendt's idea of the public sphere; "the *polis*, properly speaking, is not the city-state in its physical location; it is the organisation of the people as it arises out of acting and speaking together… it is the space of appearances in the widest sense of the word, namely, the space where I appear to others as others appear to me" (Arendt 1998: 198-199). Beck's work inspires the cosmopolitan nature of the mediapolis; "individuals are rooted in *one* cosmos but in *different* cities, territories, ethnicities, hierarchies, nations, religions - all at the same time. This creates not exclusivity but rather an inclusive plural membership" (Beck 2003: 6, quoted in Silverstone 2007: 14). He emphasises that the mediapolis is different to Habermas's (1964) notion of the public sphere which Silverstone argues is too narrow for media theorisation. Silverstone highlights that the Greek *polis* was "a public space of face-to-face communication among an elite whose capacity to debate and judge was in part dependent on the exclusion and exploitation of large sectors of the Athenian population" (Silverstone 2007: 29). While it would be simple to assume this is no longer the case, Silverstone argues that in fact contemporary media also enables a similar kind of 'face-to-faceness' where speech and action reproduce — often elitist and exclusive — mediated messages. The way these representations influence society is captured when he says;

"the world and its players appear in the media, and for most of us that is the only place they do appear. Appearance itself becomes, in both senses of the word, the world" (ibid: 30).

This sentiment is also felt by other scholars. For example, in *Reckoning: Journalism's Limits and Possibilities*, Callison & Young highlight that "within journalism studies, the role of the journalist has been deeply historicised, but much less attention has been paid to who that journalist is likely to be and what or whose social order has been reinstated and reinforced through works and/or acts of journalism" (2019: 18). Most significantly for Silverstone, this means that the media presents social frameworks that are essentially responsible for defining "the moral space within which the other appears to us" and argues that "the world's media are an increasingly significant site for the construction of moral order" (ibid: 7). While Silverstone was writing just before Web 3.0 and the age of social media really kicked in, this is something that can be applied to digital and social media too. A good example would be the debates that take place on Twitter surrounding 'cancel culture' whereby members of a society take part in debates surrounding various social issues. Interestingly, in these kinds of interactions, the audience are both the influenced and the influencer when it comes to morality. In contrast to this however, Dayan (2007: 114) argues that Silverstone's position is "one of moral maximalism" and asks "can such a version of morality be translated into rules or guidelines? Can it serve as the basis for deontology?". Dayan was unconvinced that Silverstone's idea of morality could be translated into actual laws or international agreements, and so this criticism is one of impracticality.

As a result of his own discussion regarding the influential role the media holds in promoting moral order, Silverstone calls for more regulation in the media, which he suggests would promote a more informed moral order, and also calls for media producers and consumers to be more media literate. Silverstone argues that "the media are too important to be left to the media" (ibid: 167) and suggests that journalists are not qualified enough to be making moral decisions about what is most important for society to know. Silverstone believed the two-pronged approach of more regulation from a government or organisational level, plus

increased media literacy on an individual level would enable us to guarantee justice within the mediapolis. I will return to these ideas, as well as Dayan's criticism in the analysis section.

Newsworthiness

With the social significance of journalistic decisions in mind, the following discussion will concentrate on the process of events gaining news value, which is often described as something being 'newsworthy'. Merriam Webster (n.d) defines the term 'newsworthy' as something being "interesting enough to the general public to warrant reporting". Perhaps the most widely accepted definition of newsworthiness comes from a 1965 study by Galtung & Ruge who asked a similar question; "how do 'events' become 'news'?" (1965: 65). Their research focused on which overseas events were selected for broadcast in the Norwegian press as part of their foreign news coverage. As a result of their findings, they identified twelve conditions which events had to satisfy in order to be elevated to the status of news. These included: frequency, threshold, unambiguity, meaningfulness, consonance, unexpectedness, continuity, composition, reference to elite nations, reference to elite people, reference to persons, and reference to something negative (1965: 70-71). Their study is highly respected and has been described as the earliest attempt to provide a systematic definition of newsworthiness (Palmer 1998: 378). However, their paper received criticism for being limited in its scope due to its focus on big news events (as opposed to everyday news). Curran & Seaton (1997: 277) argued that this meant we didn't see the full picture; "many items of news are not 'events' at all, that is in the sense of occurrences in the real world which take place independently of the media". Tunstall also highlights that by ignoring the more mundane day-to-day coverage that their list missed out key elements such as the importance of visuals (Tunstall 1971).

Galtung & Ruge's observations were published before TV broadcast news, digital news, and social media had become part of mainstream media, so consequently their news values have been revisited and revised by several scholars who have updated the list to accommodate for this (See McGregor 2002, Harcup & O'Neill 2001, Harcup & O'Neill 2017). Harcup & O'Neill (2001) put forward a contemporary set of conditions which they argued news stories generally

had to satisfy to be deemed newsworthy, which included: the power elite, celebrity, entertainment, surprise, bad news, good news, magnitude, relevance, follow-up, and newspaper agenda (2001: 278-9). The latter news values were constructed in the era of newspapers, radio, and TV broadcast, and so did not account for the enormous shift to digital that came with the rise of the web 3.0 in the 2000s. Consequently, in 2017, the authors further updated these conditions again to account for this, adding the following values to their 2001 list: exclusivity, conflict, audio-visuals, shareability, drama, and news organisations's agenda (Harcup & O'Neill, 2017: 1482). Marques & Mont'Alverne (2021) presented a different set of 'criteria of editorial-worthiness' relating to the selection of newspaper opinion pieces. As someone who currently works in a newsroom, I would also have several values I would want to add, such as the availability of resources, and what legal/regulatory challenges a story might present. This however encapsulates the challenge of defining newsworthiness via news values; they are highly subjective and relative, and what I regard as important news values will likely differ to that of other journalists. News values will change over time and with technological and societal development; the news values which we will regard as essential in 2050 would probably be unrecognisable in today's society. Despite it making strict newsworthiness criteria challenging, this flexibility should be seen as an overall strength; it allows news organisations to adapt their news agenda to the public need and current affairs.

Following on from this, the term 'news agenda' needs some clarification. The word 'agenda' itself has two different meanings. It can simply mean "a list of matters to be discussed", or it can mean "a secret aim or reason for doing something" (Cambridge Dictionary n.d.). There are therefore two interpretations of the term 'news agenda' - firstly, whereby it is simply a list of the stories or topics to be covered by the news, much like a news rundown or editorial story meeting. Secondly, where a news organisation produces news driven by a certain aim, for example political or financial. In order to avoid conflating the language, I will be using the term 'news formula' to capture the interaction between these two interpretations. I will be arguing that each news organisation, and each journalist has their own 'news formula', made up of a varying commitment to different news values. An individual journalist's 'news

formula' can be likened in many ways to their 'journalistic instinct'. Journalistic instinct and newsworthiness are heavily connected; a person might be described as having excellent journalistic instinct if they have a good eye for a news story. It is the 'gut feeling' which is invoked when a journalist has to make a decision about the news agenda. The notion of newsworthiness being a feeling has been observed by many scholars, including Phillips 1977; "Journalists are non-theoretic knowers who depend upon instinctive, concrete, first-hand 'acquaintance with' events, not formal, systematic 'knowledge about' events" (Phillips 1977: 70). See also Brighton and Foy 2007; Randall 2016; Shultz 2007. This is relevant literature to consider when investigating the decision-making process of assigning newsworthiness, and will be discussed further in the analysis section.

Newsification

The discussion so far has highlighted that news values exist, even if there is no universal or industry-wide agreement on what they are specifically. It is understood that the individual uses their journalistic instinct to determine whether a news event satisfies enough of these news values or conditions in order to be deemed newsworthy. Importantly, while there will always be some variation, a group of journalists at a particular news organisation will generally be in agreement as to what is newsworthy due to the values taught both in journalism school and in the *'College of Osmosis'* as Hammond (2000) puts it. Hammond points out that new journalists learn newsworthiness by simply being in a news environment where news judgements are constantly being made around them. The kinds of values they learn will depend on what kind of newsroom they are in. Harcup & O'Neill describe news values as "a shared shorthand operational understanding of what working journalists are required to produce to deadlines" (Harcup & O'Neill 2017: 1470). However, they also note that "any exploration of news values can only provide a partial explanation of what lies behind journalistic news decisions" (ibid: 1471).

There are decisions that must be made at every step of the newsmaking process, whether this be the sourcing, selection, production, distribution, or amplification of news. Various news

judgements need to be made at each stage, often at great speed and under high pressure. As highlighted in the introduction, this research is specifically interested in investigating when non-news events become news. In the literature so far, this has been described as something gaining newsworthiness. However, given the social significance of this action, this description doesn't seem explicit enough. Additionally, assigning newsworthiness to events is not only socially significant, but also ontologically significant in that it alters the *status* of that event, often shifting it from the private to the public sphere. As Dunwoody & Griffin highlight; "once a story has crossed the news threshold, subsequent, related events are much more likely to be defined as newsworthy regardless of their relative importance at the time" (2011: 184). At the very least, there is vagueness here, and at the most, there is a semantic gap occurring between the shift in non-news events gaining the status of becoming news. I propose that the term *'newsification'* is able to bridge this gap.

Newsification is the process of giving information and/or events the status of being newsworthy. It is useful to use a term to isolate this part of newsmaking in general but for research purposes especially. The news industry is facing rapid transformation, and the boundaries between non-news events and news have been tested by digitalisation, social media, and citizen journalism. I would argue that this term is beneficial because it captures the cyclical nature of news; not only can an event be newsified, but it can also be de-newsified. When an event is de-newsified, its status changes again. Looking at the events that don't become news, or that get de-newsified — either because a more urgent news story has come in, or there hasn't been time or resource to cover it — is also a fruitful area for enquiry. What news is not tells us as much about what news is. While you will be unlikely to ever hear the term "let's newsify that" in a newsroom or an editorial meeting, the term is beneficial for structuring media research as it isolates the process of assigning a hierarchy of news values. There are many opportunities for new research hypotheses within the area of newsification, however, in this study I will be focusing on one; the role that probability plays in newsification and journalistic decision-making.

Probabilities in journalism

Journalists juggle a spectrum of certainties and uncertainties when making news judgements about newsworthiness. This can be likened to what the US Secretary of Defence, Donald Rumsfield, said in a 2002 press briefing;

> There are known knowns. There are things we know we know. We also know there are known unknowns. That is to say, we know there are some things we do not know. But there are also unknown unknowns, the ones we don't know we don't know.
>
> (Zak 2021)

News has its own series of knowns and unknowns which influence the newsification process. At a glance, the *known knowns* of news would include things like embargoed press releases, published statistics or data, and factual information about events that might come through on the newswires. These are information or events which the journalist has full knowledge of. *Unknown knowns* might include things such as election results and live press briefings - where there is a certain amount of information around an event, but its outcome is uncertain. *Unknown unknowns* in journalism strike me as being the hard-hitting breaking news events like explosions, terror attacks, famous deaths etc.

Within all of these events, there are a range of probabilities being exercised. Probability "can be defined as a tool to manage uncertainty" (Alto 2019). There are several different kinds of probability;

Classic probability

This kind of probability is based on the idea of symmetry, and occurs in situations which have finitely equally likely outcomes. The best demonstration of this probability in action is in games which have n possible outcomes, all of which are equally likely to occur, for example,

flipping a coin, rolling a fair die, or spinning a roulette wheel. This can be formalised by saying the probability of rolling odd numbers on a dice for example is 3/6 or a 50/50 chance.

Frequentist probability

Frequentist approaches to probability are most commonly used in statistics since they are "concerned with the frequency of an event occurring after a large number of trials" (Soni 2019). To use the dice example again, under frequentist probability we could suppose that the die we have now is weighted. We would roll the die a certain number of times, and use the proportion of the outcomes the die gives to estimate the probability of the next outcome. The more times the dice is rolled, the better approximation we will achieve. This is why large sample sizes are given greater credibility in statistics. A limit of this approach is that you cannot conduct a test an infinite number of times, so frequentist probabilities will always be approximations. Smith (2012) says "this idea can be formalised to define the probability (P) of [an] event A as P(A) = the limit as n approaches the infinity of m/n, where n is the number of times the process (i.e. rolling the die) is performed, and m is the number of times outcome A happens".[2]

Subjective probability

Subjective probabilities are concerned with an agent measuring the strength or degree of their personal belief that a certain event will occur, based on the information available to them at a given time. I suggest that journalists regularly exercise subjective probability judgements in the newsroom, and certainly when assigning newsworthiness. This is consistent with the subjective nature of using news values as a criteria for newsification. One of the most common types of subjective probability mechanisms is Bayesian reasoning, which I will briefly outline before moving onto the methodology and analysis sections.

[2] It is worth mentioning here that there is an interesting crossover between this kind of probability and the recently emerging field of data journalism. This is not within the scope of this research's discussion, but could be fruitful for future academic exploration.

Bayesian reasoning and journalistic decision-making

While Bayesian statistics have been applied in many other fields, including marketing (Rossi et al., 2012) and law (Levitin 2016: 216-221), there has been little exploration into applying Bayesian statistics to the field of journalism. The only applications have been in regards to designing fake news detection mechanisms (see Granik & Mesyura 2017 and Tschiatschek et al., 2018).

The most relevant and advantageous outcome of Bayesian reasoning is that it describes how people adjust their beliefs as new information or evidence becomes available. I argue that this process is extremely similar to the nature of decisions that journalists make in newsrooms when juggling a number of potential news stories to run. Of course, navigating uncertainties in a newsroom via actually using Bayes' theorem would take far too long, and this is not what I am proposing. What I am proposing is that — much like in the fields of law and marketing — its application to news can be thought-provoking within critical media studies, and additionally, it has the potential to have genuinely practical consequences in the form of new tools and frameworks for news organisations.

As briefly stated in the previous section, Bayesian reasoning involves conditional probability, which determines the probability of an event *A*, given event *B*. This is driven by the simple idea that "a probability reflects our degree of belief in a hypothesis" (Mahajan 2021). Due to the subjective nature of this approach, people with access to different evidence and information will hold different strengths in their beliefs, and therefore will have different probabilities surrounding the same thing. Our beliefs change as we collect more evidence, or, as Mahajan (ibid) puts it, "evidence changes probabilities". Sprenger & Hartmann (2019) summarise this as; "Bayesians regard probabilities as expressions of subjective uncertainty" (2019: 5). Levitin (2016) explains "in the Bayesian approach, we assign a subjective probability to the hypothesis (the *prior* probability), and then modify that probability in light of the data collected (the *posterior* probability, because it's the one you arrive at after you've conducted the experiment)." (2016: 216). Put more formally, Bayes' Theorem states that the posterior

probability = (prior probability x likelihood). This can be formalised as P (A | B) = (P (B | A) x P (A)) / P (B), where P (A | B) means the probability of A given B, also known as the posterior probability. The application of Bayes Theorem will follow in the analysis section to demonstrate this in light of the experiment conducted in the methodology.

Conceptual framework and research objectives

As a result of reviewing the existing literature surrounding the notion of calculating newsworthiness, it is clear that while there has been a broad range of attention paid to defining news via news values, less attention has been paid to the actual on-the-ground decisions that make these up. The lack of practical values such as crew/equipment resources, legal considerations, and budget in even the revisited lists highlights that there is more room for enquiry within this area. The specific decision-making that takes place within the newsification process provides fertile ground for this kind of research.

This research is grounded on the following principles:

(1) News serves as a knowledge-sharing system.
(2) News influences, shapes, and reconstructs reality.
(3) Because of (1) and (2), journalists have a level of moral responsibility when it comes to making news agenda decisions.
(4) Journalistic decision-making becomes automatic (so much so that it is labelled as an instinct) and this puts it at risk of avoiding scrutiny, which is significant given (3).
(5) Probability — more specifically, Bayesian reasoning — can provide new insights into explaining journalistic decision-making and questions surrounding newsworthiness.

The concept of newsification is also of conceptual importance for this research framework since it validates the ontological shift a non-news event experiences when it becomes news. This research is also grounded in a philosophical approach to media studies, using probabilities and Bayesian reasoning as a new conceptual framework for looking at journalistic

decision-making. It is important to undertake research in this area at a time when the news industry is experiencing such rapid transformation. As highlighted in the literature, news values are relative in many ways, but in particular temporally and socially relative. As journalism moves forward it would be productive to understand what is newsworthy today, and to estimate what might be in the future. The criteria for newsworthiness needs to be flexible if journalism is to survive new technologies and bring young audiences forward with them. Journalists themselves need to ensure that their journalistic instinct is open to change in order to incorporate new news values in their decision-making. Journalists should be Bayesian in this way, updating their beliefs about newsworthiness as new information comes in about what that entails. Newsrooms and journalists that push the boundaries of what is newsworthy will likely be rewarded in the media ecosystem. The desire to get a better understanding of the criteria for newsworthiness was the catalyst behind my decision to design a thought experiment for journalists which tests the extent to which they exercise probabilistic judgements. The methodology comes in the form of a survey which is a combination of a story selection exercise with some optional open questions too. The aim with the design of the survey was to tease out the highly intuitive and almost invisible decision-making processes that journalists rely on when making news.

Ultimately, this research has two main objectives, the first being to provide an alternative view for calculating newsworthiness that is interesting to the academic community, and the second is to provide a practical framework inspired by this that news organisations and journalists can use to self-reflect on their newsification strategies. This research has several unique qualities, firstly in its conception of the term *newsification*, secondly in presenting the framework of a *'news formula'* which is built upon the analysis of the role probabilities play in newsification, and thirdly in its application of probability and Bayesian reasoning to the field of journalism which so far is unexplored territory.

METHODOLOGY

Research strategy

When approaching the methodology for this research, the focus was on how to best test the hypothesis that journalists use probabilistic calculations when making decisions about the news agenda. Several approaches were considered for this. Quantitative Content Analysis (QCA) was strongly considered, since it is able to make "replicable and valid inferences by systematically identifying specified characteristics of the message" (Krippendorf 1980). This seemed like it could be fruitful for testing the hypothesis, and I considered doing a cross-comparative analysis of different news organisations' coverage to see if I QCA could reveal any patterns in the decisions being made about news output. However, upon exploration, this research proved to have practical challenges which would have limited its success. The most significant of these being that the data was not readily available, and in order to collect an ample sample size of data would have required coding large amounts of observational data which would have been costly in time. Additionally, while QCA can give us a picture of what is happening in terms of journalistic decision-making, it cannot help us answer why.

While I could have interpreted the 'why' of journalistic decision-making in light of the data analysed through the QCA research method, I wanted to learn this from journalists themselves rather than theorising about such. As stated in my intro, it is important to me that this research was informed by what happens in newsrooms and didn't fall victim to 'armchair media and communication studies'. With this in mind, interviews and focus groups were then considered as a research strategy. The benefits of interviews is that "you often obtain unexpected information that other forms of research might not discover" (Berger 1988: 57). Additionally, focus groups as a research strategy are useful for "the study of attitudes and experiences around specific topics" (Kitzinger & Barbour 1999: 5). However, as highlighted in the literature review, the challenge with this research strategy is that journalistic instinct becomes so intuitive that journalists may not be able to recognise what news values are active in their

decision making. Therefore, individual interviews would not be very data-rich or help to reveal anything new about journalistic-decision making. Additionally, a challenge with focus groups is that the psychology of group interactions can impact the data being collected which Berger highlights; "focus groups reflect group opinions and attitudes rather than hidden beliefs" (1988: 56).

I then turned my attention to using the method of surveys. Originally, I was dissuaded from this research strategy, since I was aware that if questions are not carefully worded, then implicit biases can cause them to subconsciously direct the audience towards certain answers, which Tourangeau et al (2000) call 'response effects'. However, after some further research I reconsidered that this was not an issue if managed properly. As with any research strategy, the researcher's positionality must be managed carefully so as not to skew results. The benefit of using a survey to test the research hypothesis in this study is that it meant I would be able to answer the 'what' that QCA could have provided me, while also giving me the option to explore the 'why' that interviews offered. Surveys also had a lot more room for flexibility and creativity in their structure than other research strategies, which I felt was important when designing a simple and straightforward survey for journalists, who tend to be very short on time. Another advantage of surveys is that its findings can be generalised from the sample to the population. Dillman at al., (2014: 2) highlights that surveys "can provide a close estimate of the distribution of a characteristic in a population by surveying only some members of that population. If done correctly, it allows one to generalize results with great precision, from a few to the many, making it a very efficient method for learning about people and populations". After careful consideration, I felt that the research benefits of a survey would outweigh the potential risks for bias. Additionally, in this research, the survey essentially acts as a thought experiment which attempts to tease out the different weights news values are given to various contexts. In this sense, the potential for researcher bias affecting the data is countered by the fact that the survey is actively encouraging the participants to illuminate the subconscious biases that may be occurring within the highly automatic process of using journalistic instinct.

Research design

In order to ensure the structure of the survey was optimised for data collection, I clarified my key concepts and constructed a flow diagram of topics, ensuring my narrative flowed from easy to difficult. This resulted in splitting the survey into four sections: basic demographic data, journalism experience, the story selection exercise, and optional extra questions. Additionally, the design of the individual questions was a highly scrutinsed process. I opted to use a mix of both compulsory closed questions and optional open questions to gather a mix of quantitative and qualitative data. Within the closed questions, respondents were asked to reorder hypothetical future news stories by ranking them in order of priority. I chose to use the platform *Typeform*, since it offered a wide range of user-friendly question formats, including a ranking option where respondents simply drag answers to reorder them. The ease of use for the respondent was important to ensure that they completed the survey and also that their answers were not influenced by any usability issues. It is worth noting here that the survey was designed in June 2021, and by the time I came to analyse my data, one of the stories (Afghanistan) had actually happened and was no longer hypothetical. This wasn't a pressing issue though since most of the respondents had answered the survey prior to this news event taking place. Any respondents that were sent the survey subsequently to this were warned about the story no longer being hypothetical, and asked to take the survey imagining that it were if possible which was the only way to mitigate this.

A risk of the story selection exercise was that respondents might be tempted to go back and change previous answers as they worked through the exercise. In order to prevent this, it was highlighted at the start of the survey and the section that the exercise was not a test, and respondents were asked to refrain from changing answers once they had moved onto the next question. The survey being anonymous also helped to alleviate any respondents' concerns about potentially being judged for their answers. A control question was included at the beginning to be able to measure the changing contexts against their initial inclination about the hierarchy of stories.

Within the analysis for the story selection exercise, not only were the individual results illuminating, but equally relevant was the cross-comparison of responses. It was important to be able to compare and contrast responses since this is exactly what the exercise set out to do - to monitor whether news story orders would change depending on the context of the question. Fowler (2002: 87) highlights this further; "in general, an answer given to a survey question is of no intrinsic interest. The answer is valuable to the extent that it can be shown to have a predictable relationship to facts or subjective states that are of interest. Good questions maximize the relationship between the answers recorded and what the researcher is trying to measure." I sent the initial survey out to five journalists as a small pilot study, who were all satisfied with the survey and did not report any major feedback.

Data sample

In an ideal world, the sample universe for this research would be the UK journalism industry, and the sample size would be as large as possible, allowing for proportionality. This would mean recruiting journalists from each news organisation, and from a wide range of demographics within such. Respondents from each category at every news organisation would then be selected at random to take part in the survey. This would enable the findings to be genuinely representative when the sample is scaled up to the journalism population. However, with the time constraints of this research, this wasn't possible. Instead of random sampling, this survey used a mix of snowball, convenience, and targeted sampling. Convenience sampling requires locating "convenient cases who meet the required criteria" and then selecting respondents "on a first-come-first-served basis until the sample size quotient is full" (Robinson 2014: 32). Since many of the respondents recruited via convenience sampling offered to share the survey with their network, the sample also utilised snowball sampling whereby "one respondent is located who fulfils the theoretical criteria, then that person helps to locate others through social networks" (Warren 2002: 87). The limitations of both of these approaches is that they are at risk of generating unwarranted generalisations due to noth convenience and snowball respondents being likely to operate in similar social or

economic circles. In order to alleviate this, I utilised targeted sampling where I reached out directly to journalists via email and social media networks, targeting those who were from differing backgrounds and organisations to the respondents who had already completed the survey. This helped achieve a better balance in the responses.

The survey ended up receiving responses from 50 journalists with a nearly equal split between male (n = 24) and female (n = 26) respondents. There were two newsrooms — Sky News and Tortoise Media — which shared a larger percentage of the responses since I was given permission to send a mass email with the link to the survey to all of the editors in both organisations. However, since I received at least one response from every major TV broadcaster, and responses from a range of other newsrooms, I saw this data density as an opportunity to analyse the effect working for a particular newsroom has on news values, so I used it to my advantage for further investigation.

Research tools

As previously mentioned, the main research tool I used to design the survey and to gather data was the survey platform, Typeform. I had used the platform before for previous studies and therefore I was familiar with its features as well as its benefits and limitations. An advantage of Typeform is that it automatically generates data visualisations as your live data comes in. As a result, I was able to study the data as my sample size grew which allowed me to spot opportunities for investigation early on. I downloaded all of the charts the platform had generated into a report. I printed this out in order to be able to see all of my data in front of me. I used the statistical technique of comparison to analyse the way the news story orders had changed according to the different contexts in the closed questions. This gave me an insight into what is happening in the process of journalistic decision-making. Additionally to this, I employed thematic analysis on the open, optional questions (which the majority of respondents opted to answer). I followed Braun & Clarke's six phases of thematic analysis as a guide for this. (Braun & Clarke 2006).

Ethics & reflexivity

This study was approved under the LSE ethics procedure. Since it was not handling personal data and did not ask questions around sensitive issues, it was not necessary to refer this research to an ethics board of any kind. For extra caution, I ran the survey anonymously. These precautions ensured that the research was ethically sound.

As a journalist myself, I had to have high self-awareness in regards to reflexivity to ensure that my positionality did not impact the integrity of the research. According to Cohen & Crabtree (2006), "reflexivity is an attitude of attending systematically to the context of knowledge construction, especially to the effect of the researcher, at every step of the research process". It is something every researcher has to be aware of. In order to ensure any of my pre-existing assumptions did not impact the integrity of the pursuit of the research questions, I ensured that I was self-reflective about my own biases when designing the survey questions. Additionally to this, I started this research with a neutral hypothesis, i.e. to investigate the role probability plays in journalistic decision-making. Since this is an unexplored area of enquiry, there were no pre-existing positions for me to take. The survey therefore was designed from the position of curiosity since I have no commitment to views surrounding probability and journalistic decision-making. I let the data I have collected speak for itself in this pursuit - which I will discuss next in the results section.

RESULTS AND ANALYSIS

As stated in the methodology, an aim of this research was to be able to capture both the what and why behind journalistic decision-making. In this results section, I will firstly analyse the data in terms of what it reveals about how journalists make probabilistic calculations when making decisions about the news. I will then go on to discuss the why and what drives these decisions, considering the influence of news values. Following this, I will revisit the moral

responsibility that journalistic decisions hold before presenting the notion of the 'news formula' as a practical framework for determining newsworthiness. I will lastly highlight the potential implications of this research.

What the survey findings tell us about probability and Bayesian reasoning in news

In the journalistic decision-making through experiment survey, respondents were asked to drag a range of news series into order of priority, much like what would be required when deciding the headlines at the top of a news rundown. These were closed questions which just required respondents to reorder them by dragging the boxes into place. There are the six stories that were presented to them;

(1) The Queen has been taken to King Edward VII's Hospital for an ongoing illness as a precaution.
(2) The Afghanistan government is on the brink of collapse according to local reports.
(3) The government has announced it is going to direct heavy investment to hydrogen refuelling infrastructure across the UK as it works towards its target of banning all new petrol and diesel cars by 2030.
(4) Ant and Dec announce they are stepping down from ITV for a 5 year contract with the BBC.
(5) The effectiveness of vaccines is in doubt against the latest variant of Covid-19, the Zeta strain.
(6) The UK is facing job shortages in critical sectors including freight, construction, health, and hospitality. Industry leaders say Brexit is to blame.

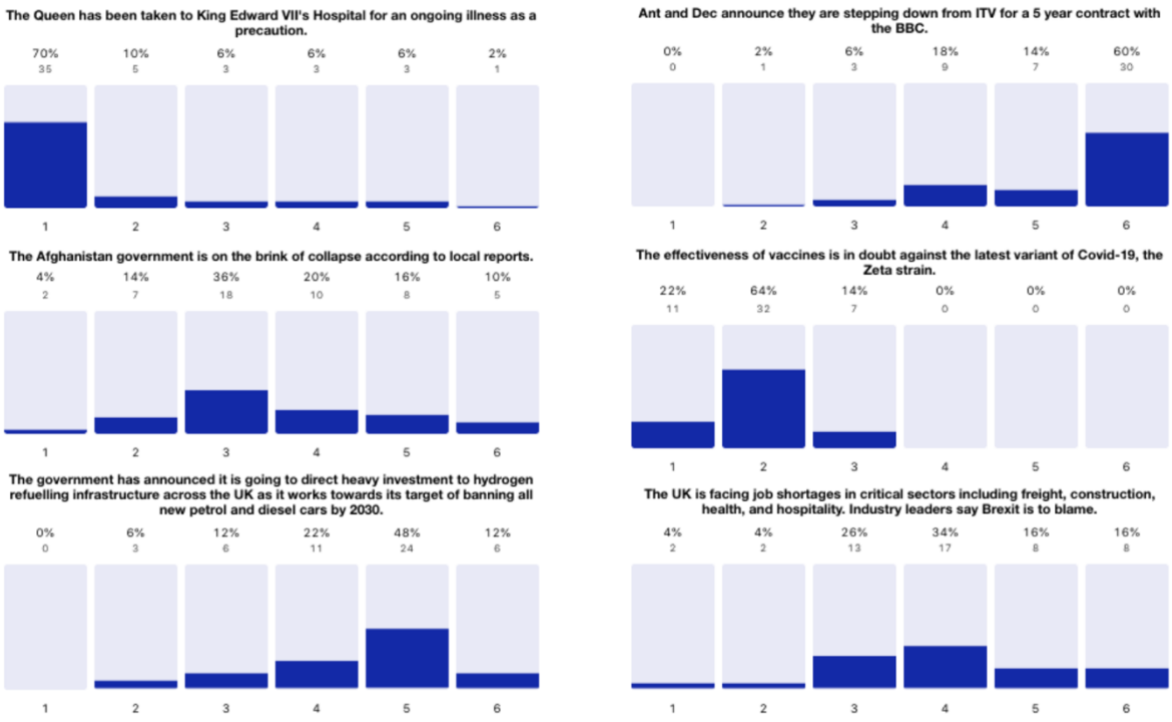
Respondents were then given the option of answering five optional open questions. Around 80% of respondents opted to complete the first four optional questions, and approximately 40% of respondents chose to utilise the last question which gave them the opportunity to share any extra thoughts on the topic. The results of the survey were very revealing and I believe

confirm the hypothesis that probability plays a role in journalistic decision-making, especially when thought of under the structure of Bayesian reasoning.

Firstly, the most significant thing to emerge from the survey is that, on the whole, journalists are in vague agreement about what is newsworthy. More specifically, they are certainly in agreement about what headline news is, even if the mid-range stories vary a bit more.

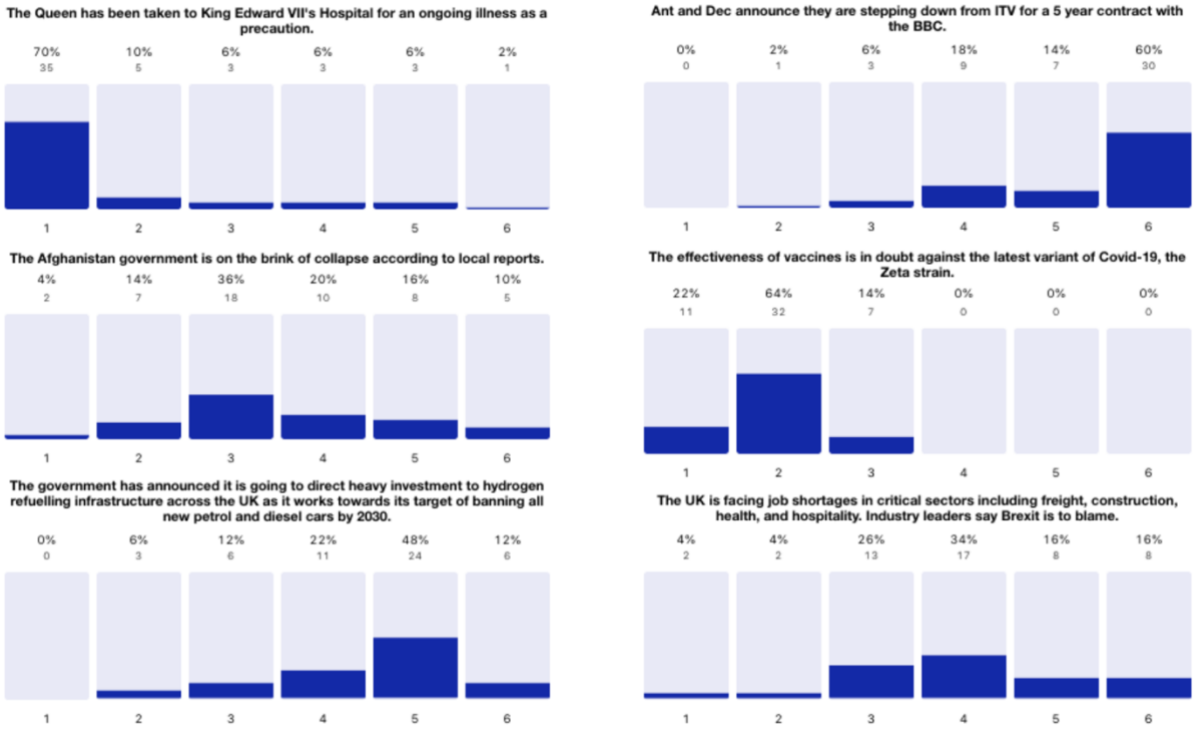
In the control question which had no context, 52% of respondents put story (1) about the Queen as the top story. The story about Covid-19 (5) was a close second, with 38% choosing this as their top story, and 46% choosing it as their second story. The third, fourth, and fifth stories saw more variation. 30% put the Brexit story (6) third, while 28% put the Afghanistan story (2) third. The environment story (3) was generally put fourth or fifth. There was a much larger agreement on the entertainment story (4) which 70% of people put last. In conclusion, the control question saw respondents agree on the top and bottom stories, but saw more variation between the middle stories. Full data for this can be seen in (6) of Appendix B.

Figure 1: Distribution of stories in the control question [(6) Appendix B]



The next question was the first of the contexts which asked respondents to imagine they were the editor of a national TV broadcaster in the UK who was subject to Ofcom broadcasting rules, and that they were responsible for building the news rundown for the next hour. Interestingly, respondents were in much more agreement about the order of stories here compared to in the control section. 70% put the Queen story (1) first, 64% put the Covid-19 story (5) story second, 36% put the Afghanistan story (2) third, 34% put the Brexit story (6) forth, 48% put the environment story (3) fifth, and 60% put the entertainment story (4) last.

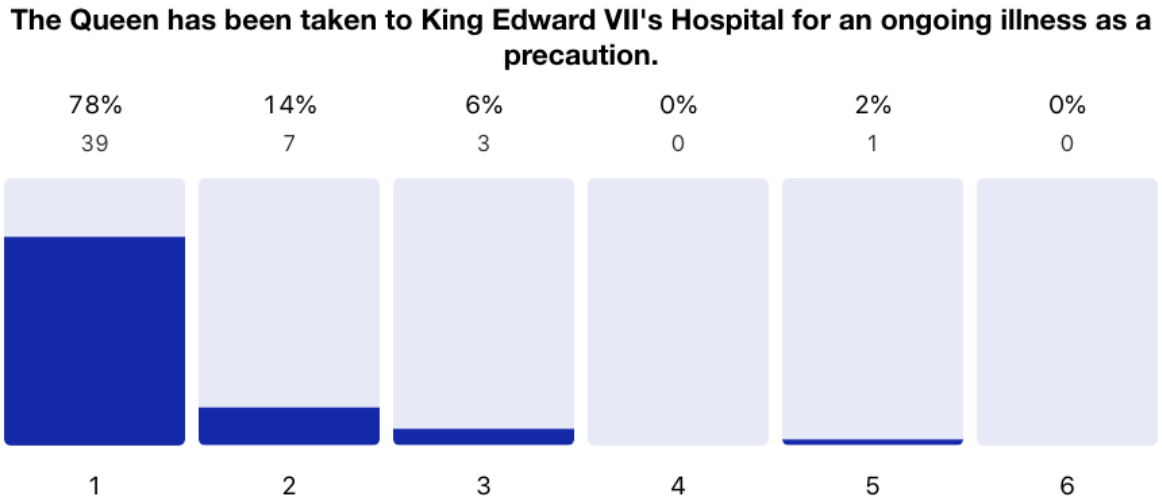
Figure 2: Distribution of stories in the context of a TV broadcaster's news rundown. [(8) Appendix B]



As the survey goes on, it becomes clear that the majority of respondents change their story order depending on the context. Some good examples of this are;

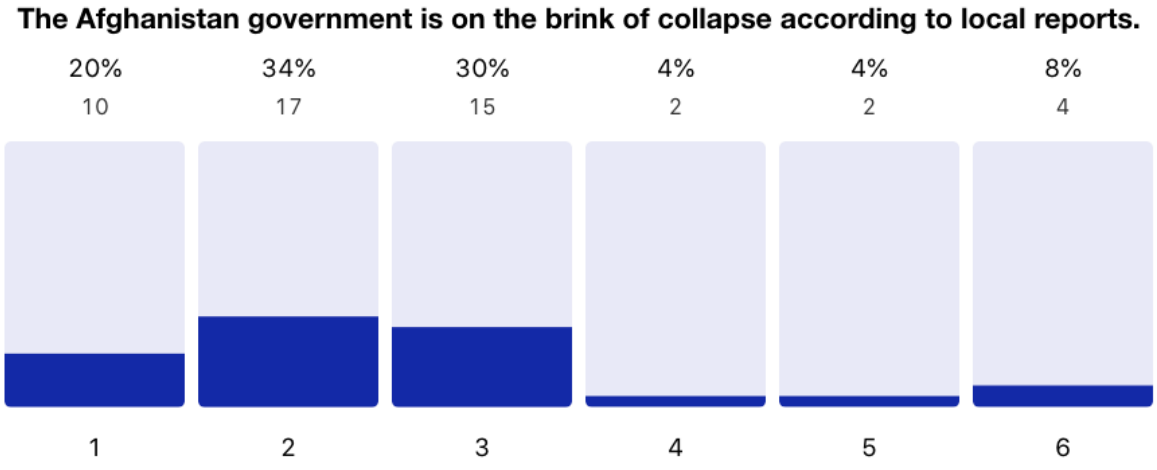
In Q3 which told respondents that stories about the royals have the highest engagement on TV, 78% put this as their top story choice compared to 70% in the control question.

Figure 3: Q3 top story [(10) Appendix B]



In Q4 which told respondents that the story about Afghanistan had gone viral on social media, this caused people to move it to the top three places in the rundown, with 20% of respondents saying it would have been their top story which is a 12% increase from the control question.

Figure 4: Q4 story distribution [(11) Appendix B]

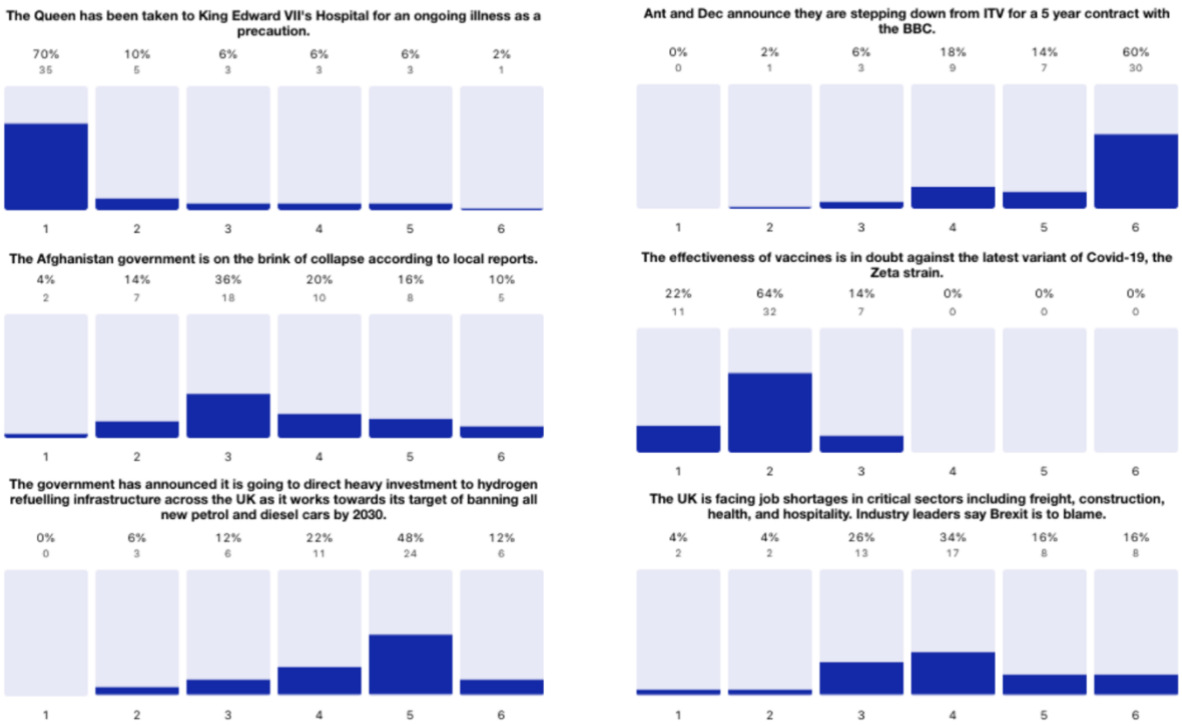


Respondents were also responsive to commercial goals, although the change was less significant than the previous contexts. In Q5 respondents were told that the shareholders of

the company were asking for more climate stories in the output. This caused the story to to be moved from being most likely to be fifth in the rundown (in the control question) to the fourth.

Additionally, a significant finding - albeit unsurprising to journalists - is that respondents were highly reflexive to changes in the news environment. Q6 asked them to order the stories following the announcement that the Afghanistan government had collapsed, leading to widespread conflict. (It is worth nothing that the survey was created in June 2021, so this was still a hypothetical story when most of the respondents took the survey. It is pure coincidence that the story ended up actually happening during the time this research was being analysed). This caused the news order to change significantly, with 78% now opting to have Afghanistan as the top story

Figure 5: Q6 Story distribution [(13) Appendix B]



I would argue that the way that journalists react to new developments and information is Bayesian in nature. In the survey, we can imagine the control question to be our prior

probabilities. Through the way in which the answers changed depending on the context, this is evidence of the way that journalists modify the probability of them prioritising a certain story in light of the new evidence they receive. This then becomes the posterior probability, which would be the decision that would make it through to broadcast or publication should no further new evidence come through.

It is evident that journalists exercise subjective probabilities when making news judgements and calculating newsworthiness. I would actually go as far to say that the way in which journalists react to new evidence, such as changes in the news environment, or confirmation of certain facts, is absolutely central to the role. In many informal conversations I had with journalists about this idea of updating subjective probabilities, many thought I was almost stating the obvious and that this was self-evident within a news environment. However, I think that outside of a news environment, this is not necessarily how people would think journalists might operate, and there are several circumstances where it is not always possible for journalists to be as reflexive as they are in the UK news environment. For example, in a state-controlled media organisation, I would imagine you would find less flexibility in terms of changing the stories so quickly due to them often needing approval from above which delays the reaction. Additionally, some broadcasters or journalists might be limited by commercial or editorial goals which make changing the news stories challenging, even if their beliefs have been updated in light of new evidence. While this subjective nature of newsworthiness is open to criticism in regards to impartiality and bias, I would argue that it is a necessary quality to have as a journalist in order to remain flexible to news developments.

News values revisited – how are journalistic probabilities constructed?

This section of the analysis will consider what drives these probabilistic calculations using thematic analysis of the optional open questions. Several themes emerged from my thematic analysis, which I conducted by printing out responses and highlighting connecting ideas and themes. Although time consuming, this was preferable to an electronic method since I was able to really immerse myself in the data.

Firstly, it became clear that respondents thought that curiosity and/or inquisitiveness was an essential quality to have as a journalist, and was a huge driver of journalistic instinct;

Respondent 1:

> If the person is naturally inquisitive, they already have a major feature required in journalism

Respondent 14:

> Journalistic instinct is "a curiosity to find out 'why'.

Additionally, it was evident that respondents believed that journalistic instinct is a mix of having inherently journalistic qualities, which are then refined through journalism education and newsroom experience. Some respondents felt the inherent qualities were more important;

Respondent 21:

> Largely inherent. You have to be a born storyteller and a cynic.

Respondent 23:

> Relies on internal values - moral foundations - including inquisitiveness and honestly, and thus cannot be taught

While others thought the ability to teach or learn journalistic instinct was more significant:
Respondent 27:

> Journalistic instinct "takes time to develop — I was told I didn't have 'news sense' when I was training. I didn't understand what that meant until a few years into my career.

Respondent 15:

> I think it can be taught, I learnt through years of watching other people make those calls.

And here are some examples of those who thought it was a mix of the two:

Respondent 35:

> I think that there are many things that can be taught about journalistic instinct - in terms of identifying what is important and valuable - and a good story. You can even learn how to tell the story in an interesting way. But there is a level of brilliant storytelling, which can only really be achieved if you have a natural flair for engaging an audience or a reader.

Respondent 13:

> A combination of both. And it also depends entirely on context – someone might have great instincts for one audience, but not for another. I think experience is sometimes confused with instinct.

This is interesting to think about for the purposes of this research in terms of the implications it can have on journalistic training. Depending on their philosophy around journalistic instinct, news organisations might be inclined to hire, train, or invest in different kinds of journalists. If journalistic instinct is an inherent quality, where the person is essentially naturally good at making accurate decisions fast, they would be willing to take a chance on hiring someone who is a good decision maker but who has little news experience. On the contrary, if they view journalistic instinct as being an external quality that is taught, they might opt for someone who has newsroom experience over someone who doesn't.

The most significant theme to emerge from this analysis however was the importance the respondents placed on the audience, with many highlighting that this is a central driver for news decisions. Many also highlighted that uniqueness or unusualness is a strong factor in newsworthiness too. When asked what makes something 'newsworthy' respondents replied;

Respondent 7:

> Something is newsworthy if it has a direct, or indirect, effect on people's lives (their jobs, earnings, education, freedom).

Respondent 38:

> How much it affects the reader/listener/viewer

The emphasis on audience is significant for discussion, particularly because in all of the lists of news values discussed in the literature, none made explicit reference to the impact stories have on audiences or the public sphere as being a main driver of newsworthiness, however, according to the survey, it is a high priority for journalists. This is interesting to consider at a time where audiences are becoming more and more active in their participation in news. Previously, before Web 3.0, audiences would have been fed news passively, and aside from writing into the news organisation, would not have much input in the news making process. However, nowadays, audiences are able to instantly react to news coverage via social media and other communication networks. Journalists are getting more feedback from their audiences, and while they are not technically obliged to take notice of such, their engagement often increases if they do. This is demonstrated in Q4 of the survey, where the fact that the story is going well on Instagram potentially pushes it further up the running order (see figure 4). Boczkowski & Mitchelstein (2013: 2) highlight what they call 'the news gap' which is the distance between what journalists report and what audiences want to know; news organisations "provide readers with much of the news that circulates in society, particularly the news that is essential for a healthy functioning of the body politic. But online readers have

shown a preference for something other than what news organisations give them. Although the news organisations disseminate news about politics, international, and economic matters, the stories that garner the most attention from the public tend to be about sports, crime, entertainment, and weather."

The moral implications of calculating newsworthiness

The emphasis on the audience by journalists leads into a discussion on the morals that underpin journalistic decisions. This is important to discuss because a journalist's moral position will determine what news values they prioritise, which will go on to create stories that "reinforce conventional opinions and established authority" (Curran & Seaton 1997). In Silverstone's Media and Morality, he suggests that journalists are not qualified to be making moral decisions about what a society needs to know. He went as far as to call for stronger regulation, and better media literacy education to remedy this. However, Silverstone was writing in the pre-internet era, where journalists were the prime gatekeepers of news selection. Since his book was published, an enormous digital transformation has been taking place. Today, anyone with an internet connection is capable of writing and publishing a news article, or filming a news story due to camera equipment becoming more affordable. Social media allows audiences to interact directly with journalists and news organisations. The influence this is having on news judgements has been observed in many studies. For example, Schaudt & Carpenter (2009) found that online audiences are having an increasing influence on which stories are displayed prominently on a news organisation's homepage. They identified that "news leaders can now measure what stories the public perceives as of most interest to them. As a result, news editors can make online story placement decisions based on what the news user is reading at a given moment" (2009: 17). Similarly, Lamot & Van Aelst (2020: 487) concluded that, "audience analytics seem to influence the norm of what constitutes newsworthiness".

I would argue that if the audience is playing a stronger role in the news selection process, and news organisations are able to genuinely integrate these into their newsification practices, then

this automatically alleviates Silverstone's concerns that journalists are not qualified to be making moral decisions. If audience members are determining what coverage they want to know about, then under Silverstone's mediapolis model, they are technically determining their own reality. Of course at this stage this is an oversimplification of what happens, and there are still significant power relations that influence news output regardless of audience input. However, it is not impossible to imagine a news organisation whose coverage is driven entirely by it's audience and simply facilitated by journalists. This kind of democratic journalism is being explored more, for example by Tortoise Media[3] who say their members help determine the angles covered in their journalism.

The news formula as a framework for newsification

As touched on in the literature review, a *news formula* can be a useful framework to capture a news organisation or individual journalists' news values. The word 'formula' has multiple definitions, however the most relevant for this framework is "a list of the ingredients used for making something" (Merriam Webster n.d). As shown in the survey, it is accurate to say that journalists make probabilistic calculations about an item's newsworthiness. Additionally, as highlighted in the literature review, news values exist in journalism and are constantly evolving with social and temporal changes. What the news formula seeks to do is combine these elements into a practical framework.

What I would propose under the news formula framework is that a news organisation could be given a list of all of the news values currently in use across industry. This list could be consulted on and updated annually. From this list of values, news organisations could assign a probability score which reflects how important that particular value is to them at the time, and how likely they would be to use it as a condition for newsworthiness. For example, if we

[3] https://www.tortoisemedia.com/

use the news value of entertainment as an example, *The Sun* newspaper would be likely to assign a higher probability score to this than *The Times.* What an organisation would end up with is a list of news values which are each assigned a score - this would be their news formula. The news formula framework could be likened to what is essentially a formalised version of journalism *heuristics*. Heuristics are "mental shortcuts that can facilitate problem-solving and probability judgments" (The Decision Lab n.d.). I would argue that there is a strong link between journalistic instinct and heuristics; the 'gut' feeling a journalist gets about a news item may well be driven by a heuristic they have constructed throughout their career. Dunwoody & Griffin suggest that journalism "rewards those who can make quick decisions about "what's news" and decide rapidly how to cobble together a story. Extremely fast decisions are, perforce, heuristic ones. Thus, journalism is unapologetically a world of heuristic decision making."

The news formula isn't something which would be used necessarily in the newsroom, because it would take far too much time to do this on a story-by-story basis. More so it would be used in news strategy or long-term editorial meetings. It could be helpful for helping a news organisation re-evaluate their news strategies and priorities which is not only important in terms of their brand and purpose, but also for business model sustainability. The digital revolution has left many traditional news organisations trailing behind in terms of what coverage they deliver and how they deliver it. Technological change isn't coming to a halt anytime soon, and so, a regular re-evaluation of news practices in regards to newly available technologies and evolving audience needs are going to become more crucial for survival. Involving journalists themselves in this kind of strategy work would be important, and most would be willing to explore such for the security of their job in the future if nothing else. The news formula is presented here as an idea grounded in theory but could definitely be tested in practicality.

Implications and limitations

To outsiders of the institution, journalism is often seen as being largely objective. However, it is evident that this objectivity (or impartiality) is actually the culmination of many journalists' subjective news values, of which all arrive at similar destinations. I believe there is more room here for a philosophical inquiry into seeing news as a product of collective intelligence, created by a group of individuals. Other areas for philosophical enquiry include looking into the element of luck and game theory in news. Something I noticed was lacking in many scholars' identification of news values was a practical recognition that much of what news is able to cover comes down to luck, not only in terms of what is going on in the general news environment, but also from a resources point of view within the organisations. Sometimes a story is deemed as being newsworthy, but because there is a lack of camera crew or reporters to cover it, it does not get 'newsified'. This example further exemplifies the need for the term newsification, because not everything that is newsworthy actually gets to become news.

A further implication of this research is the role that probabilistic journalism decisions could play in the development of AI tools for journalists and news organisations. For example, if we were able to quantify an organisation's news formula, you could in theory create a tool which generates personal news wires on the basis of the types of news that organisation is currently prioritising. SR, Sweden's national public broadcaster recently experimented with this after they created an algorithm powered by news values which was able to promote public service journalism.[4] There is a lot of scope for this kind of work at the intersection of journalism and AI.

It is worth noting the slight limitation that the survey experiment was more about newsification in the sense of choosing the top stories that will be broadcast, likely selected from the newswires or pre-commissioned in editorial meetings. Within newsification, there

[4] https://blogs.lse.ac.uk/polis/2020/09/28/this-swedish-radio-algorithm-gets-reporters-out-in-society/

are different levels of event altering statuses that can be studied. For instance, in order to get an understanding of newsification right at the beginning of the newsmaking process, it would be fascinating to run a similar experiment with news agencies like PA, AP, and Reuters who source and write the news stories up for the news wires. News organisations then choose from these (as well as pursuing their own stories) to determine what will be elevated via broadcast or publication. The latter was chosen as a study simply because the author of this research had better access to broadcast news organisations rather than news agencies.

CONCLUSION

This research set out to achieve two main objectives. Firstly, it worked to provide an alternative view for assessing news values and calculating newsworthiness. By adding the term 'newsification' into the vocabulary in this sphere it provides even more opportunity for enquiry. It was also a pioneer in applying Bayesian reasoning and probabilities to the field of journalism. I believe there is much more fertile ground here for further research. These research outcomes are most relevant to the academic community. Secondly, this research sought to provide a practical framework that news organisations and journalists can use to self-reflect on their news strategies. As a result of the survey undertaken by fifty journalists, the idea of a 'news formula' framework was developed. While this is in its infancy, I believe it has potential to encourage self-reflection and innovation within newsrooms once developed further.

Decision sciences have developed in many fields in recent years. I hope that this research shows that there is scope for fruitful enquiries surrounding journalistic decision-making, particularly because the pace of decision-making in journalism is so fast. The news industry is experiencing somewhat of an existential crisis due to the technological revolution affording many of its past privileges to the everyday person. As media re-orientates itself in this digital

society, it is crucial to take note of the role it plays in constructing and reconstructing moral order. This is something I would like to explore in further research, for example, investigating which news values reinforce social inequalities and power hierarchies. Ultimately though, this research has been driven by the belief that the news industry needs to adapt if it is to survive, and a key part of its output where it is possible to do this is within the newsification process. Lastly, I have found using a philosophical framework to encourage this in this research to be very successful. I believe there is much more room for philosophical enquiry in news, and hope that this research can be part of the foundations of a new field of research; 'the philosophy of news'.

REFERENCES

2.0 News as a knowledge sharing system

Graber, D. A. (1988) *Processing the news: How people tame the information tide* (2nd ed.), New York: Longman.

Gunter, B. (2012) *Poor reception: Misunderstanding and forgetting broadcast news,* Routledge.

Park, R.E. (1940) News as a Form of Knowledge: A Chapter in the Sociology of Knowledge, *American journal of Sociology* 45(5): 669-686.

Robinson, J. P., & Levy, M. R. (1986) *The main source. Learning from television news*, Beverly Hills, CA: Sage.

2.1 The relationship between news and society

Arendt, H. (1998) *The Human Condition*, University of Chicago Press.

Callison, C. and Young, M.L. (2019) *Reckoning: Journalism's Limits and Possibilities,* Oxford University Press

Dayan, D., (2007) [Honoring Roger Silverstone] On Morality, Distance and the Other Roger Silverstone's Media and Morality, *International Journal of Communication* 1(1): 10.

Dunwoody, S. and Griffin, R.J. (2011) Judgmental Heuristics and News Reporting, pp. 177-198 in R. Gowda and J. C. Fox. (eds) *Judgments, Decisions, and Public Policy*, Cambridge: Cambridge University Press.

Habermas, J. (1964) The Public Sphere–An Encyclopedia Article, pp. 220-226 originally appeared in *Fischer Lexicon*, Frankfurt am Main.

Kochiyama, T., Ogihara, N., Tanabe, H.C., Kondo, O., Amano, H., Hasegawa, K., Suzuki, H., De León, M.S.P., Zollikofer, C.P., Bastir, M. and Stringer, C. (2018) Reconstructing the Neanderthal brain using computational anatomy, *Scientific reports* 8(1): 1-9.

Silverstone. R. (2007) *Media and Morality: On the Rise of the Mediapolis*, Polity: Cambridge.

2.2 Newsworthiness

Brighton, P. and Foy, D. (2007) *News values*, Sage.

Cambridge Dictionary. (n.d.) Agenda, URL: https://dictionary.cambridge.org/dictionary/english/agenda [Last consulted 15 August 2021].

Curran. J. and Seaton. J. (1997) *Power without Responsibility,* London: Routledge.

Galtung, J. and Ruge, M.H. (1965) The structure of foreign news: The presentation of the Congo, Cuba and Cyprus crises in four Norwegian newspapers, *Journal of peace research* 2(1): 64-90.

Harcup, T. and O'Neill, D. (2001) What is news? Galtung and Ruge revisited, *Journalism studies* 2(2): 261-280.

Harcup, T. and O'Neill, D. (2017) *W*hat is news? News values revisited (again), *Journalism studies* 18(12): 1470-1488.

Marques, F.P.J. and Mont'Alverne, C. (2021) What are newspaper editorials interested in? Understanding the idea of criteria of editorial-worthiness, *Journalism* 22(7): 1812-1830.

McGregor, J. (2002) *Restating news values: Contemporary criteria for selecting the news*, in refereed articles from the Proceedings of the ANZCA 2002 Conference, Coolangatta. Communication: Reconstructed for the 21st Century.

Merriam Webster. (n.d.) Newsworthy, URL: https://www.merriam-webster.com/dictionary/newsworthy [Last consulted 15 August 2021].

Palmer, J., (1998) News production, news values, pp.377-791 in A. Briggs and P. Cobley (eds) *The media: An introduction*, Harlow: Longman.

Phillips, E.B. (1977) Approaches to objectivity: Journalistic vs. social science perspectives, *Strategies for communication research*, 63-77.

Randall, D. (2016) *The Universal Journalist - Fifth Edition,* London: Pluto Press.

Schultz, I. (2007) The journalistic gut feeling: Journalistic doxa, news habitus and orthodox news values, *Journalism practice* 1(2): 190-207.

Jeremy, T. (1971) *Journalists at Work*, London: Constable.

2.3 Newsification

Dunwoody, S. and Griffin, R.J. (2011) *Judgmental Heuristics and News Reporting,* pp.177-198 in R. Gowda and J., C. Fox, *Judgments, Decisions, and Public Policy*, Cambridge: Cambridge University Press.

Evans, H. (2000) *Essential English for Journalists and Writers,* London: Pimlico.

Harcup, T. and O'Neill, D. (2017) What is news? News values revisited (again), *Journalism studies* 18(12): 1470-1488.

2.4 Probabilities in journalism

Alto, V. (2019) *Probability: classical, frequency-based and subjective approaches,* 3rd July 2019, URL: https://medium.com/analytics-vidhya/probability-classical-frequentist-and-subjective-approach-3ded266b8845 [Last consulted 3 August 2021].

Smith, M. (2012) What Is Probability?, URL: https://web.ma.utexas.edu/users/mks/statmistakes/probability.html [Last consulted 2 August 2021]

Soni, D. (2019) What is Probability? Understanding the interpretations of probability, 31st July 2019, URL: https://towardsdatascience.com/what-is-probability-175b189c0498 [Last consulted 4 August 2021]

Zak, D. (2021) 'Nothing ever ends': Sorting through Rumsfeld's knowns and unknowns. The Washington Post, 1st July 2021: https://www.washingtonpost.com/lifestyle/style/rumsfeld-dead-words-known-unknowns/2021/07/01/831175c2-d9df-11eb-bb9e-70fda8c37057_story.html [Last consulted 7 August 2021].

2.5 Bayesian reasoning and journalistic decision-making

Granik, M. and Mesyura, V. (2017) Fake news detection using naive Bayes classifier, pp. 900-903 in the 2017 IEEE first Ukraine conference on electrical and computer engineering (UKRCON),.

Levitin, D.J. (2016) *A field guide to lies: Critical thinking in the information age*, Penguin.

Mahajan, S. (2021) Probability as degree of belief - Bayesian probability, URL: https://eng.libretexts.org/Bookshelves/Industrial_and_Systems_Engineering/Book%3A_The_Art_of_Insight_in_Science_and_Engineering_(Mahajan)/03%3A_Part_III-_Discarding_complexity_with_loss_of_information/07%3A_Probabilistic_Reasoning/7.01%3A_Probability_as_degree_of_belief_-_Bayesian_probability [Last consulted 4 August 2021]

Rossi, P.E., Allenby, G.M. and McCulloch, R. (2012) *Bayesian statistics and marketing*, John Wiley & Sons.

Sprenger, J. and Hartmann, S. (2019) *Bayesian philosophy of science*, Oxford University Press.

Tschiatschek, S., Singla, A., Gomez Rodriguez, M., Merchant, A. and Krause, A. (2018) Fake news detection in social networks via crowd signals, pp. 517-524 in *Companion Proceedings of the The Web Conference 2018*.

3.1 Research strategy

Berger, A.A. (1998) *Media research techniques*, London: SAGE.

Dillman, D., Smyth, J. and Christian, L. (2014) Sample surveys in our electronic world, pp.1-17 in *Internet, Phone, Mail, and Mixed-Mode Surveys: The Tailored Design Method*, 4th ed, Hoboken, NJ: Wiley & Sons Inc.

Kitzinger, J. and Barbour, R. (1999) Introduction: The Challenge and Promise of Focus Groups, pp. 1-20 in *Developing Focus Group Research*, London: SAGE.

Krippendorff, K. (1980) History, pp.3-17 in *Content analysis: An introduction to its methodology*, Sage: London.

Tourangeau, R., Rips, L. J. and Rasinski, K. (2000) An Introduction and a Point of View, pp. 1–22 in *The Psychology of Survey Response*, Cambridge: Cambridge University Press.

3.2 Research design

Fowler, F. (2002) Designing questions to be good measures, *Survey research methods* 3: 76-103.

3.2.1 Data sample

Robinson, O.C. (2014) Sampling in interview-based qualitative research: A theoretical and practical guide, *Qualitative research in psychology* 11(1): 25-41.

Warren, C.A. (2002) Qualitative interviewing, *Handbook of Interview Research*, Thousand Oaks: SAGE Publications.

3.2.2 Research tools

Braun, V. and Clarke, V. (2006) Using thematic analysis in psychology, *Qualitative research in psychology* 3(2): 77-101.

3.2.3 Ethics & reflexivity

Cohen D, and Crabtree B., (2006) *"Qualitative Research Guidelines Project."*, URL: http://www.qualres.org/HomeRefl-3703.html [Last consulted August 21 2021].

4 Results

Boczkowski, P.J. and Mitchelstein, E. (2013) *The news gap: When the information preferences of the media and the public diverge*, MIT press.

Curran. J. and Seaton. J. (1997) *Power without Responsibility*, London: Routledge.

Lamot, K. and Van Aelst, P. (2020) Beaten by Chartbeat? An experimental study on the effect of real-time audience analytics on journalists' news judgment, *Journalism Studies* 21(4): 477-493.

Merriam-Webster (n.d.) Formula, URL: https://www.merriam-webster.com/dictionary/formula#:~:text=%3A%20a%20list%20of%20the%20ingredients,expressed%20in%20letters%20and%20symbols [Last consulted 28 August 2021]

Schaudt, S. and Carpenter, S. (2009) The News That's Fit to Click: An Analysis of Online News Values and Preferences Present in the Most-viewed Stories on azcentral.com, *Southwestern Mass Communication Journal* 24(2).

The Decision Lab. (n.d.) *Why do we take mental shortcuts? Heuristics explained*, URL: https://thedecisionlab.com/biases/heuristics/ [Last consulted 28 August 2021]

APPENDICES

APPENDIX A: SURVEY QUESTIONS

Survey Introduction:

Name and email redacted

This survey is for my MSc Dissertation as part of my course in Media and Communications Governance at the London School of Economics. My study is investigating the role that probability plays in journalistic decision-making, and will look at the process of news selection through a philosophical lens.

This is a completely anonymised survey which will ask you to put news stories in order of priority in different hypothetical contexts. There are no right or wrong answers and it is not a test - this is for research purposes only.

The best way to approach each question is to use journalistic instinct to answer intuitively - please refrain from changing your previous answers as this will impact the integrity of the research.

The study focuses on the UK news environment, but you don't have to work in a UK newsroom to take part. The aim is this research can be applied and built upon at a more global level in the future.

Thank you so much for your time, and please feel free to share this with fellow colleagues in the news industry

SECTION 1: BASIC DEMOGRAPHIC INFORMATION

(1) What gender do you identify as?

- Female
- Male

(2) What age group do you belong to?

- 16 - 21
- 21 - 24
- 25 - 29
- 30 - 39
- 50 - 59
- 40 - 49
- 60 - 69
- 70+

(3) Which ethnic group do you belong to?

- White - English/Welsh/Scottish/Northern Irish
- White - Irish
- White - Gypsy or Irish Traveller
- White - any other background
- Mixed - White and Black Caribbean
- Mixed - White and Black African
- Mixed - White and Asian
- Mixed - any other background
- Asian/Asian British - Indian
- Asian/Asian British - Pakistani
- Asian/Asian British - Bangladeshi
- Asian/Asian British - Chinese
- Asian/Asian British - any other background
- Black/Black British - African
- Black/Black British - Caribbean
- Black/Black British - any other Black/African/Caribbean background
- Arab
- Prefer not to say

SECTION 2: JOURNALISM EXPERIENCE

(3) What is your job title?

(4) What organisation do you work for? (optional)

(5) How many years of experience do you have in the news industry?

- 0 - 1
- 2 - 5
- 6 - 9
- 10 - 15
- 16 - 19
- 20 - 25
- 26 - 29
- 30+

SECTION 3: NEWS STORIES THOUGHT EXPERIMENT

The next section will present you with a series of journalism scenarios set in a hypothetical future news environment.

(6) Control question: Please put these stories in order of priority

There is no context for this question - just answer using your initial instinct. Remember there are no wrong answers. Please do not change your order once you have begun the rest of the questions.

(1) The Queen has been taken to King Edward VII's Hospital for an ongoing illness as a precaution.
(2) The Afghanistan government is on the brink of collapse according to local reports.
(3) The government has announced it is going to direct heavy investment to hydrogen refuelling infrastructure across the UK as it works towards its target of banning all new petrol and diesel cars by 2030.
(4) Ant and Dec announce they are stepping down from ITV for a 5 year contract with the BBC.
(5) The effectiveness of vaccines is in doubt against the latest variant of Covid-19, the Zeta strain.
(6) The UK is facing job shortages in critical sectors including freight, construction, health, and hospitality. Industry leaders say Brexit is to blame.

(7) Please feel free to explain your chosen order (optional)

Respondents were then asked to order the stories again according to the following contexts:

(8) Q1: You are the editor for a national TV broadcaster in the UK (subject to Ofcom broadcast rules) and you are building the running order for the next hour.

(9) Q2: If you had to drop one of the stories from the rundown, which would it be?

(10) Q3: You learn from audience data that stories about the royals have the highest engagement and interest on TV.

(11) Q4: The story about Afghanistan has gone viral on Instagram, with many people sharing infographics and memes about the situation.

(12) Q5: Your line manager told you in a meeting last week that shareholders of the news organisation you work for want to see more climate stories in the TV output.

(13) Q6: The newswires have just announced that it has been confirmed that the Afghanistan government has collapsed, leading to widespread conflict.

(14) Q7: You are now the editor for the online team and in charge of delegating writers to stories. What are the three top stories you'd want to prioritise to get published onto the website and app first?

(15) Q8: You're the editor of a right-wing tabloid newspaper. Which story is the lead on your front page?

(16) Q9: You're the editor of a left-wing broadsheet newspaper. Which story is the lead on your front page?

SECTION 4: SOME OPTIONAL QUESTIONS

(17) How would you define journalistic instinct in your own words?

(18) Is journalistic instinct an inherent quality a person either has or doesn't have, or is it a set of external values that can be taught?

(19) Newsmakers at all levels in the newsroom have to make hundreds of decisions a day, often under intense pressure. Do you think having good-decision making skills is what makes someone a 'good journalist' (or producer etc)?

(20) It would obviously be impossible to report every single event that happens in the world. What makes something 'newsworthy'? (at any level - local, national, international etc).

(21) My research is focusing on the role that probability plays in journalistic decision-making, i.e., investigating the kinds of (often subconscious) calculations that newsmakers use when making decisions about the news agenda. If you have any additional thoughts on this in general, please feel free to share them here:

APPENDIX B: RELEVANT SURVEY RESULTS

SECTION 1: BASIC DEMOGRAPHIC INFORMATION

(1) What gender do you identify as?

- Female: 52%
- Male: 48%

(2) What age group do you belong to?

- 25 - 29: 46%
- 30 - 39: 20%
- 50 - 59: 16%
- 40 - 49: 10%
- 21 - 24: 6%
- 60 - 69: 2%
- 16 - 21: 0%
- 70+: 0%

(3) Which ethnic group do you belong to?

- White - English/Welsh/Scottish/Northern Irish: 74%
- Asian/Asian British - Indian: 6%
- Prefer not to say: 6%
- Black/Black British - African: 4%
- Mixed - any other background: 4%
- Arab: 2%
- White - any other background: 2%
- White - Irish: 2%
- Asian/Asian British - any other background: 0%
- Asian/Asian British - Bangladeshi: 0%
- Asian/Asian British - Chinese: 0%
- Asian/Asian British - Pakistani: 0%
- Black/Black British - any other Black/African/Caribbean background: 0%
- Black/Black British - Caribbean: 0%

- Mixed - White and Asian: 0%
- Mixed - White and Black African: 0%
- Mixed - White and Black Caribbean: 0%

SECTION 2: JOURNALISM EXPERIENCE

(3) What is your job title?

Responses included: Assistant News Editor, Assistant Editor, Senior News Editor, Planning Producer, Editor, Editorial Intern, Senior Radio Journalist, Designer, Design Director, Reporter, Social Media Producer, Partnerships Producer, Data Journalist, Social Editor, Senior Journalist, Producer, Head of Specialist Journalism, Freelance News Editor/Reporter, TV News Correspondent, Health Correspondent, Head of Social, News Editor, Senior News Editor, Chief Sub-Editor, Entertainment Reporter, Freelance Journalist, Assistant Producer, Head of News, Head of Home News, Senior News Producer, TV News Producer, Production Journalist, Journalist, Social Media Producer.

(4) What organisation do you work for? (optional)

Responses included: ITV, Sky News, GB News, BBC News, Tortoise Media, Al-Monitor, Khaleej Times, BT Sport, Evening Standard, Reuters, Wireless, News UK, Al Jazeera English, The Guardian, The Times, CGTN Europe.

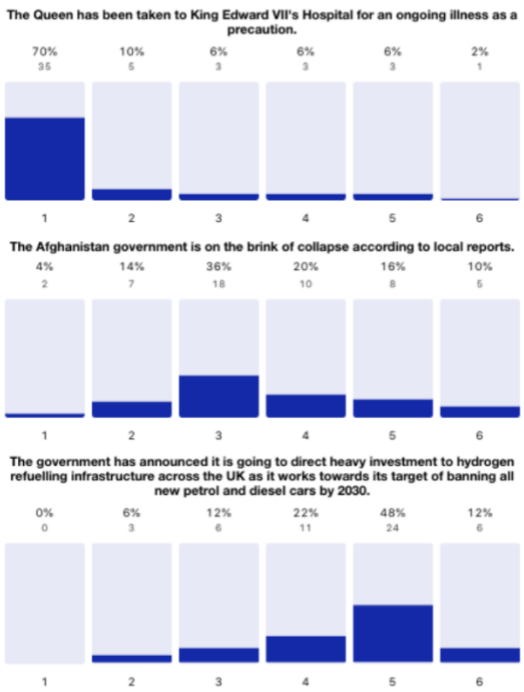
(5) How many years of experience do you have in the news industry?

- 2 - 5: 36%
- 6 - 9: 22%
- 10 - 15: 14%
- 30+: 12%
- 0 - 1: 6%
- 16 - 19: 4%
- 26 - 29: 4%
- 20 - 25: 2%

SECTION 3: NEWS STORIES THOUGHT EXPERIMENT

The next section will present you with a series of journalism scenarios set in a hypothetical future news environment.

(6) Control question: Please put these stories in order of priority

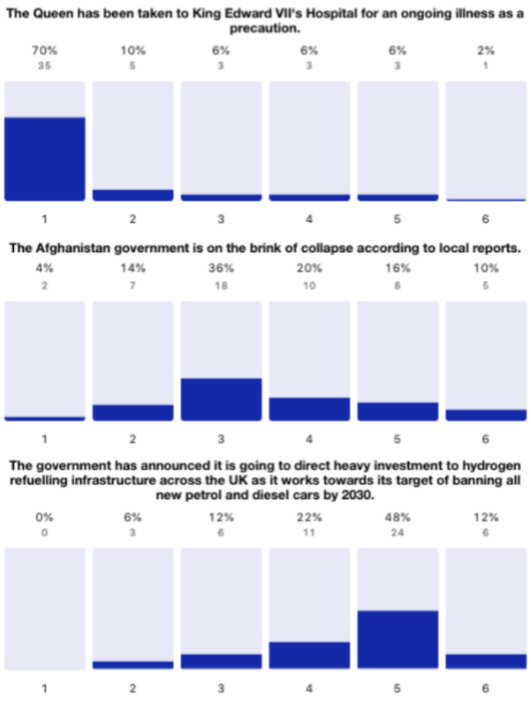


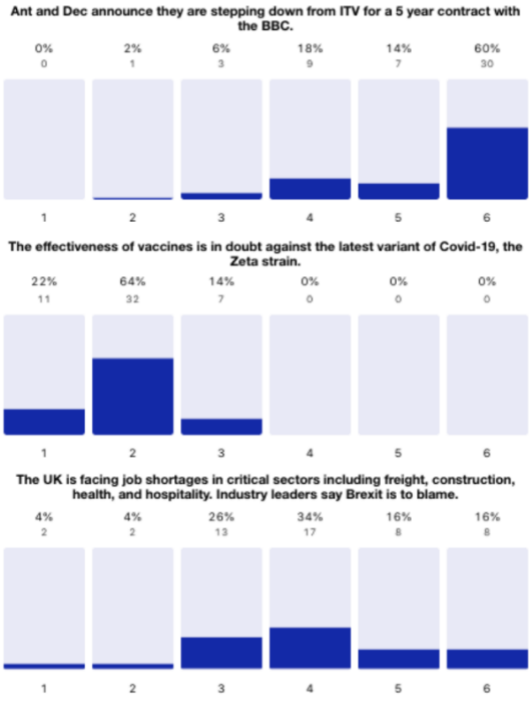
(7) Please feel free to explain your chosen order (optional)

Relevant responses will be mentioned in analysis.

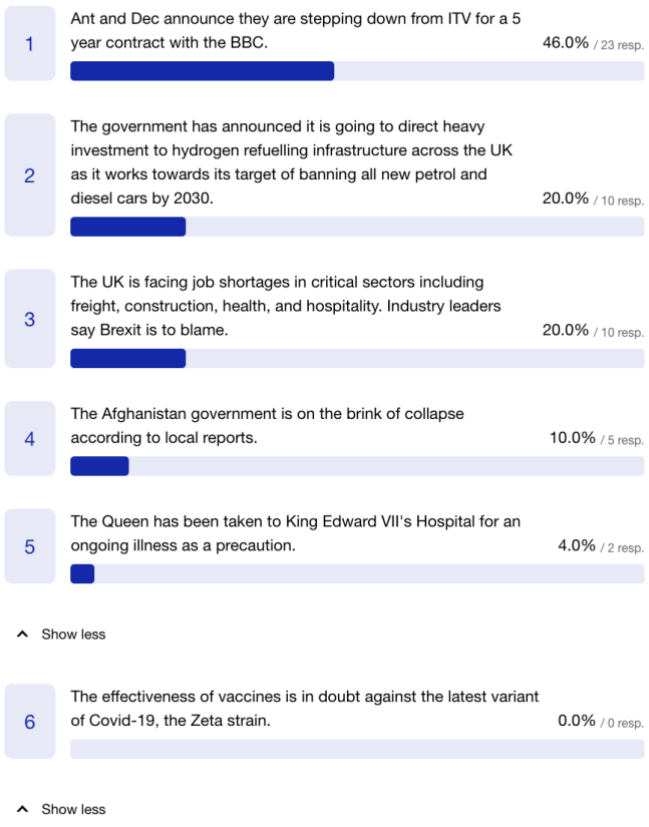
Respondents were then asked to order the stories again according to the following contexts:

(8) Q1: You are the editor for a national TV broadcaster in the UK (subject to Ofcom broadcast rules) and you are building the running order for the next hour.

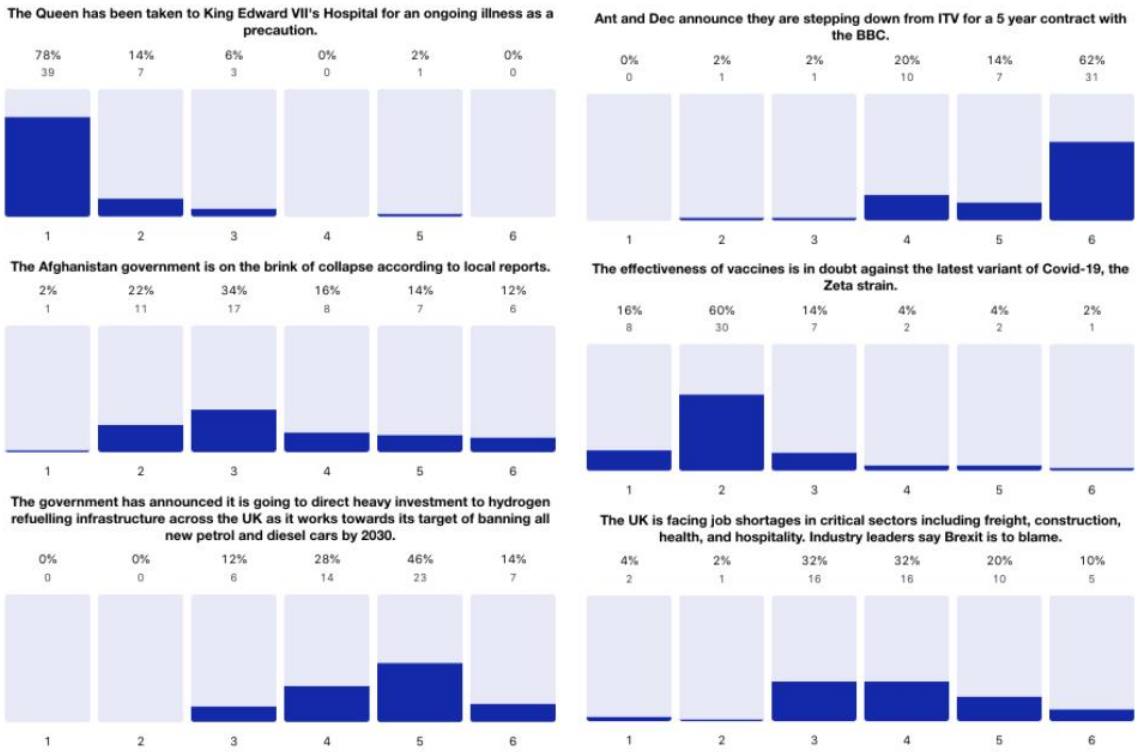




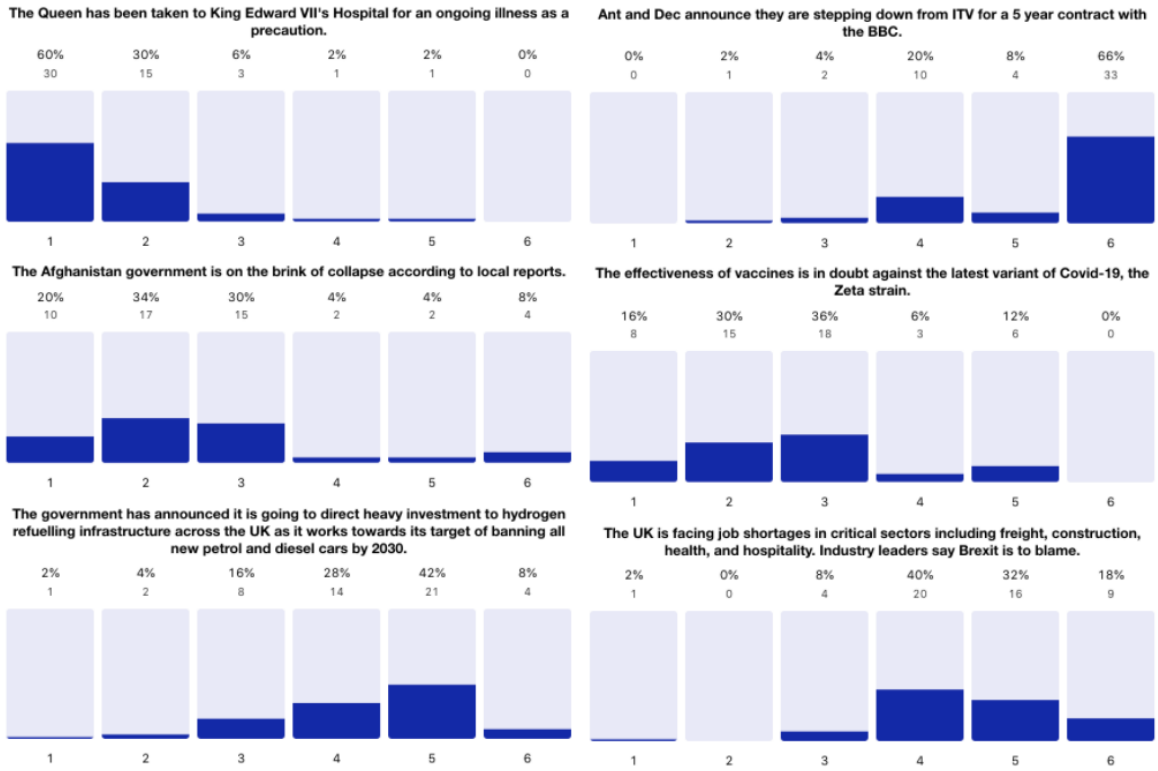
(9) Q2: If you had to drop one of the stories from the rundown, which would it be?



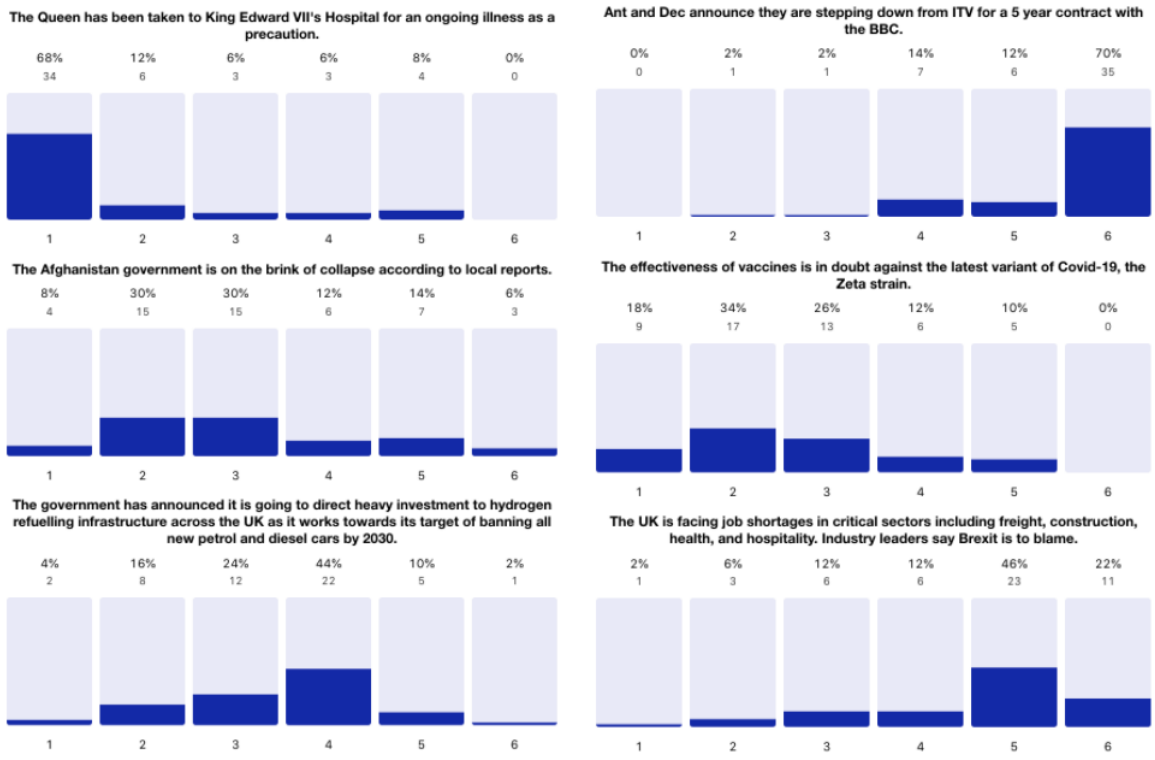
(10) Q3: You learn from audience data that stories about the royals have the highest engagement and interest on TV.



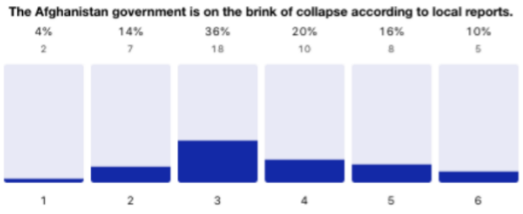
(11) Q4: The story about Afghanistan has gone viral on Instagram, with many people sharing infographics and memes about the situation.

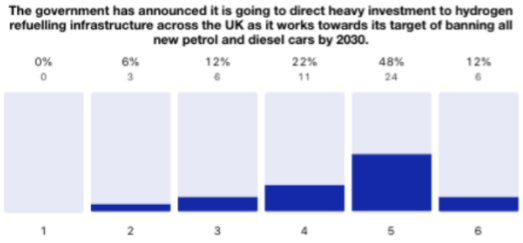


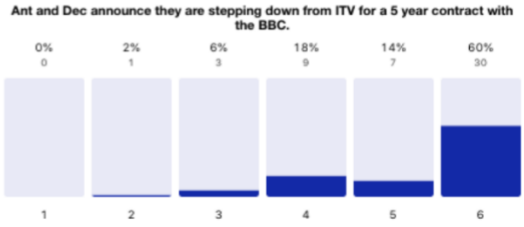
(12) Q5: Your line manager told you in a meeting last week that shareholders of the news organisation you work for want to see more climate stories in the TV output.

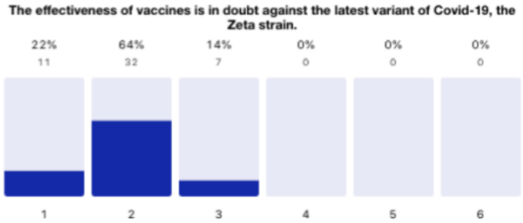


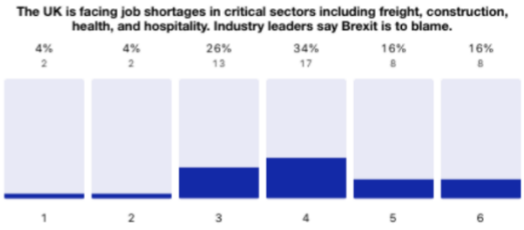
(13) Q6: The newswires have just announced that it has been confirmed that the Afghanistan government has collapsed, leading to widespread conflict.



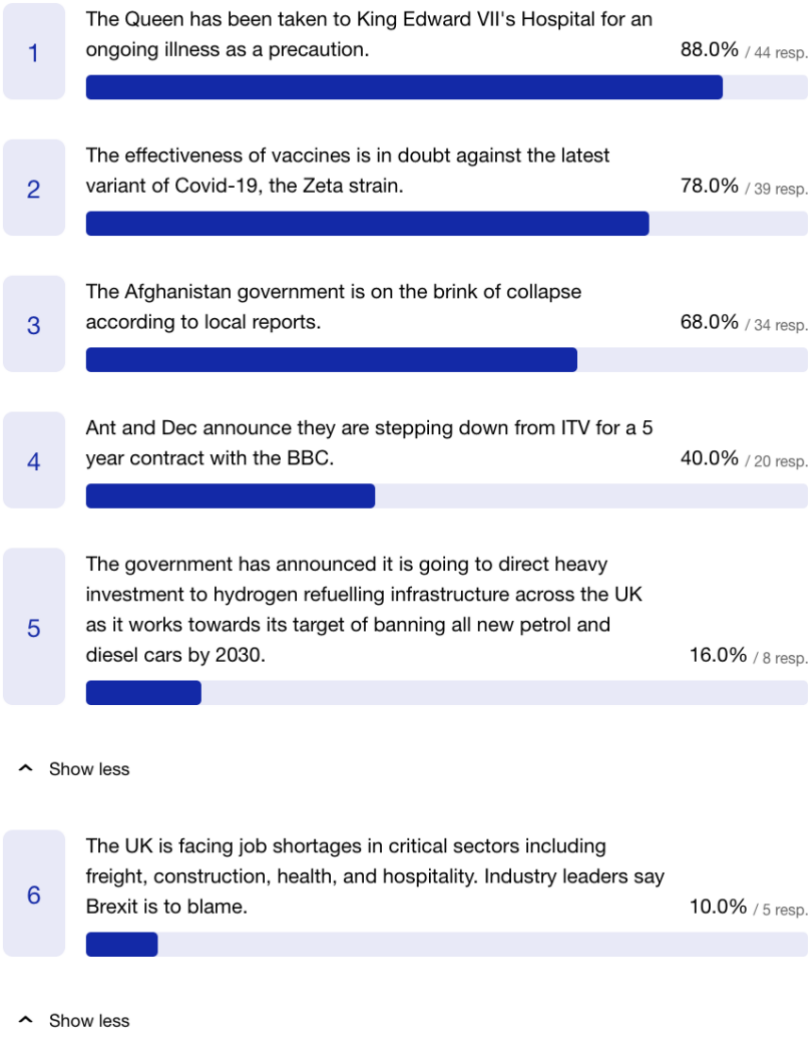




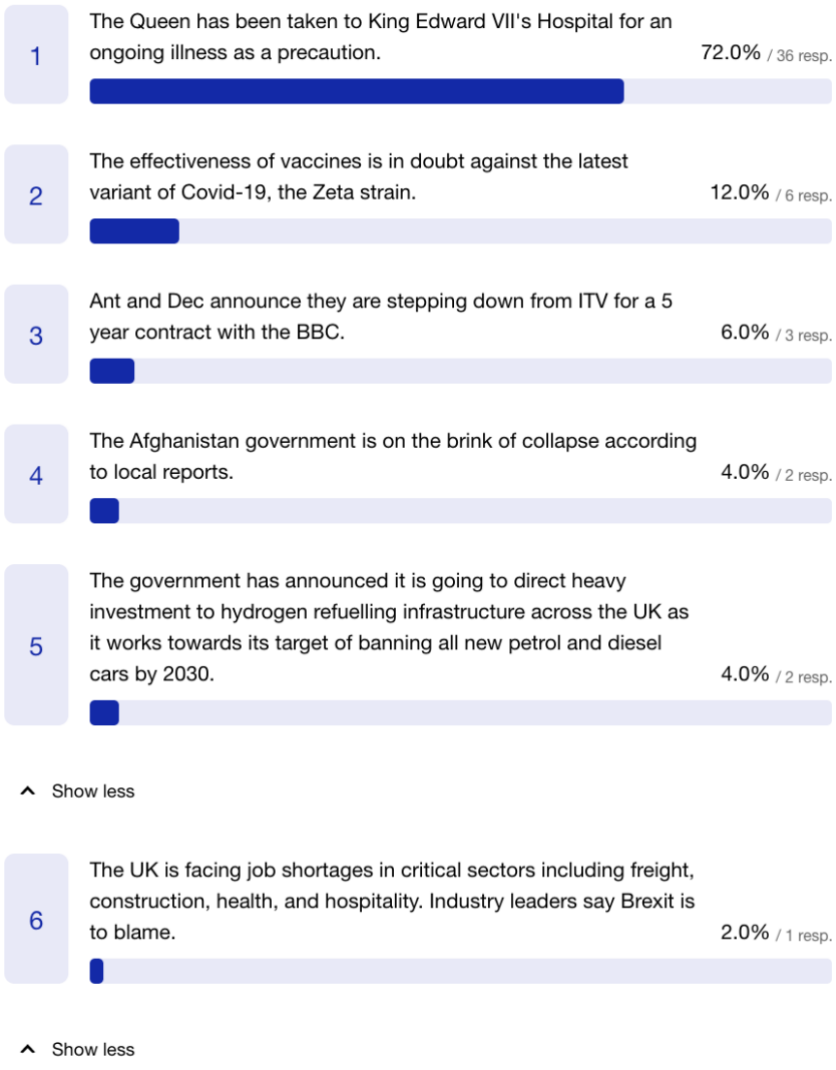




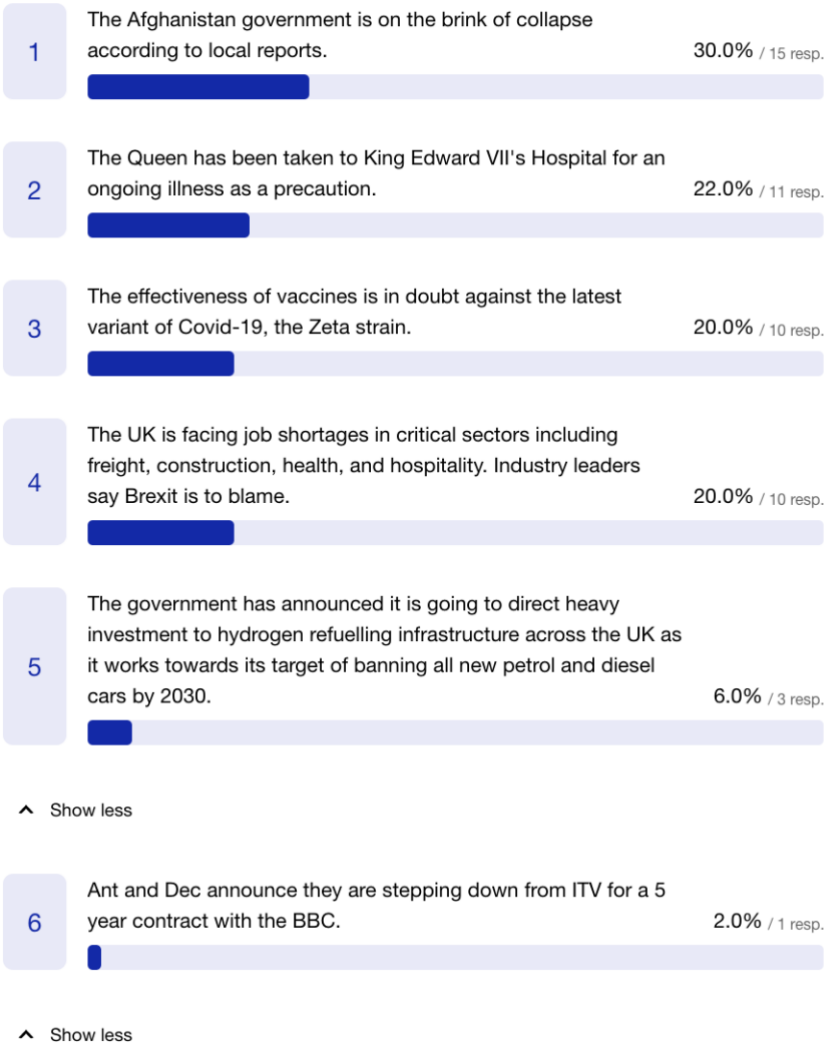
(14) Q7: You are now the editor for the online team and in charge of delegating writers to stories. What are the three top stories you'd want to prioritise to get published onto the website and app first?



(15) Q8: You're the editor of a right-wing tabloid newspaper. Which story is the lead on your front page?



(16) Q9: You're the editor of a left-wing broadsheet newspaper. Which story is the lead on your front page?



SECTION 4: SOME OPTIONAL QUESTIONS

(17) How would you define journalistic instinct in your own words?

Relevant responses will be mentioned in analysis. 37/50 answered.

(18) Is journalistic instinct an inherent quality a person either has or doesn't have, or is it a set of external values that can be taught?

Relevant responses will be mentioned in analysis. 41/50 answered.

(19) Newsmakers at all levels in the newsroom have to make hundreds of decisions a day, often under intense pressure. Do you think having good-decision making skills is what makes someone a 'good journalist' (or producer etc)?

Relevant responses will be mentioned in analysis. 42/50 answered.

(20) It would obviously be impossible to report every single event that happens in the world. What makes something 'newsworthy'? (at any level - local, national, international etc).

Relevant responses will be mentioned in analysis. 42/50 answered.

(21) My research is focusing on the role that probability plays in journalistic decision-making, i.e., investigating the kinds of (often subconscious) calculations that newsmakers use when making decisions about the news agenda. If you have any additional thoughts on this in general, please feel free to share them here:

Relevant responses will be mentioned in analysis. 21/50 answered.

Media@LSE MSc Dissertations Series

The Media@LSE MSc Dissertations Series presents high quality MSc Dissertations which received a mark of 75% and above (Distinction).

Selected dissertations are published electronically as PDF files, subject to review and approval by the Editors.

ISSN: 1474-1938/1946