PART ONE

THE STATE OF MEDIA LITERACY IN SUB-SAHARAN AFRICA 2020 AND A THEORY OF MISINFORMATION LITERACY

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ABOUT THIS REPORT

This report on the 'teaching of different forms of media literacy' in sub-Saharan Africa, and their potential for reducing susceptibility to misinformation, is one of four reports to be published by the University of Westminster Press. The series explores, on the one hand, the types, drivers and effects of misinformation spread in sub-Saharan Africa today, and, on the other hand, three approaches to reducing associated harms: (i) fact-checking, (ii) changes to the legal and regulatory framework for media and information and (iii) media or misinformation literacy.

The four reports all draw in part on a study of more than 1,200 examples of false or misleading information identified as circulating on the continent by one or more of the 14 fact-checking organisations that published fact-checks regularly across Africa between 1 July and 31 December 2019. The report on that study will be published in 2022.

The series also explores the three main responses put forward in reaction to the rise in concern about misinformation following the unexpected outcome of the United Kingdom's June 2016 referendum on its membership of the EU (Cadwalladr, 2017 and many others), the November 2016 election of US President Donald J. Trump (Read, 2016 and many others) and revelation of government-backed disinformation campaigns in South Africa (Skiti & Shoba, 2017), Kenya (Dahir, 2018) and Nigeria (Cadwalladr, 2018) around the same period.

The first two reports published in the series examine responses that fall within the remit of government. **The first report** seeks to answer two key research questions:

i. Whether elements of broad media literacy, or of a form of news literacy focused specifically on identifying misinformation, were included in or planned for the curricula taught in state schools in seven sub-Saharan African countries as of June 2020

ii. Whether evidence suggests that teaching young people such elements of broad media literacy, or a form of news literacy focused on the issue of misinformation, reduces their susceptibility to believe and share false information

To answer these questions, the report sets out:

i. Clear definitions drawn from past and recent scholarship of 'broad media literacy' or 'Media and Information Literacy', 'media literacy', 'news literacy', 'misinformation literacy' and 'misinformation literacy behaviours' (see definitions in Appendix 1)

ii. An outline of the six fields of knowledge and skills that the research we have reviewed suggests are essential to the development of what

we define as misinformation literacy and misinformation literacy behaviours (see definitions in Appendix 1)

iii.   Evidence of the extent of teaching of elements of media or news literacy in seven sub-Saharan African countries as of June 2020, drawn from a review of the curricula most widely followed in public schools and interviews with subject experts in those countries

iv.   Evidence from past studies around the world of the effectiveness of teaching media literacy or misinformation literacy-type knowledge and skills in reducing individuals' susceptibility to misinformation and leading to misinformation literacy behaviour

The second report looks into the nature and effects of changes made to laws and regulations between 2016 and 2020 in 11 countries[1] across sub-Saharan Africa. The study found that over the 5 years, the number of laws and regulations in those countries related to 'false information' nearly doubled from 17 to 31. However, the laws and regulations passed or amended showed little correlation with, or effect on, the drivers, types and effects of misinformation in circulation. Although the changes made appeared to have actual or potential chilling effect on media and political debate in many of the countries studied, the effects of the legislation in reducing the harmful effects of misinformation was minimal, a tiny effect compared to the scale and nature of the problem. At the same time as nearly doubling the number of laws and regulations penalising publication of 'false information', officials and ministers across the continent made repeated calls for the teaching of media literacy – knowledge and skills that would enable young people to identify and reject misinformation.

The third report in the series, to be published in 2022, sets out how the growth in concern about the effects of misinformation worldwide from 2016 onward also added impetus to a growth in fact-checking across the continent. The report shows that, after the first fact-checking organisation, Africa Check, was set up on the continent in 2012[2], more than 14 operations emerged across Africa between 2016 and 2020 and examines their working practices and structures.

The final report in the series seeks to identify the key types, drivers and actual and potential effects of misinformation on the continent, drawing on evidence from the study of more than 1,200 examples of false or misleading information identified by fact-checking organisations as circulating on the continent, and on recent scholarship in the field.

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1   Benin, Burkina Faso, Cote d'Ivoire, Ethiopia, Kenya, Malawi, Niger, Nigeria, Senegal, South Africa and Uganda.

2   For disclosure, the lead author of this report was the founder of Africa Check..

RESEARCHERS AND DECLARATIONS OF INTEREST

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In Part One:

- Anya Schiffrin was responsible for all of section 5 (i.e. sub-sections 5.1–5.7 'Media literacy teaching around the world')

- Sahite Gaye was responsible for sections 6.1.1 (Cote d'Ivoire) & 6.1.5 (Senegal)

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- Cornia Pretorius was responsible for section 6.1.6 (South Africa)

- We were collectively responsible for all of section 7

- Peter Cunliffe-Jones was responsible for the other parts

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1. EXECUTIVE SUMMARY

In the past few years alone, false and misleading information has caused or contributed to a wide range of harm to individuals and groups across Africa from vigilante violence and civil unrest in Ethiopia (Nur, 2019) and Nigeria (Adegoke, 2018), through the use of wrong medical treatments for Ebola (Ogala & Ibeh, 2014), malaria (Faive Le-Cadre, 2019) or Covid-19 (Busari & Adebayo, 2020), to harms to mental health (Kulundu, 2019), politics (Skiti & Shoba, 2017), businesses (Ghana Fact, 2019) and much more.

Concern about the actual and potential harmful effects of misinformation has grown both among political leaders (Cissé, 2018; Okakwu, 2018; Olewe, 2018) and the public (Newman et al, 2020; Wasserman & Madrid-Morales, 2018) since 2016, leading to calls for solutions ranging from fact-checking (Cunliffe-Jones, 2022a; Graves, 2016; Stencel & Luther, 2020), the introduction of strict laws and regulations against 'false information' (Cunliffe-Jones et al, 2021; Kaye, 2019; Schetzer, 2019), to teaching media literacy (Barron, 2017; Cissé, 2018; Livingstone, 2018).

> **MISINFORMATION LITERACY ABSENT FROM AFRICA'S SCHOOLS**
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> 1. Media literacy is barely taught in seven countries studied; elements of misinformation literacy present in only one
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> 2. Misinformation literacy is its own sub-type, distinct from both media literacy and even news literacy
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> 3. Misinformation literacy requires knowledge and skills in six fields particular to false information
>
> 4. Studies suggest these misinformation knowledge and skills will help individuals identify and dismiss false information
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> 5. Norm-setting by public figures, institutions and changes from traditional and social media may also be vital to bring change in misinformation behaviour

> » **Evidence of effects of 'broad media literacy' on susceptibility to misinformation is limited**

A 2012 meta-analytic review of the effects of 51 'media literacy' interventions found that, taken as a whole: 'Media literacy interventions had positive effects on outcomes including media knowledge, criticism, perceived realism, influence, behavioural beliefs, attitudes, self-efficacy and behaviour'. The research by Jeong et al (2012) found that the more the teaching time devoted to the subject and the narrower the focus in the courses taught, the more effective they were. Nevertheless, evidence of the effects of teaching this form of broadly defined media literacy on young people's specific ability to identify and reject false information is limited.

Broadly defined media literacy, known in more recent years as Media and Information Literacy (MIS), was described in 1982 as 'the knowledge, skills and attitudes which will encourage the growth of critical awareness and, consequently, of greater competence among the users of electronic and print media' (UNESCO, 1982). As US educationalist Patricia Aufderheide noted in 1993, this definition was considered broad even then and expected to grow broader. 'Emphases in media literacy training range widely, including informed citizenship, aesthetic appreciation and expression, social advocacy, self-esteem and consumer competence' (Aufderheide, 1993).

These competencies are clearly essential for individuals and society, but their relevance to the ability to identify false information in all its many forms are largely unproven. Media literacy scholar W. James Potter identifies media literacy as taught in the United States as 'a large, complex patchwork of ideas' (Potter, 2010). And as the researchers Robert Keener and Jevin West argue in a forthcoming article, while it would be wrong to say that digital citizenship or media arts are unimportant, 'the many different concepts in media literacy education have not addressed many students' inability to reason effectively with information online' (Keener & West, 2021).

Instead, we show below, knowledge and skills specific to the types of misinformation in circulation are required to reduce susceptibility to false and misleading claims.

> **Six fields of knowledge and skills form misinformation literacy**

Based on a review of (i) empirical evidence of the knowledge and skills used by fact-checking organisations in Africa and worldwide to identify false information and (ii) a series of independent studies of the effects of particular knowledge and skills on this ability (Amazeen & Bucy, 2019; Brennan et al, 2020; Duffy, 2018; Golebiewski & Boyd, 2019; Hill, 2020; Shane & Noel, 2020; Van der Linden et al, 2020; Vicol, 2020), we propose a theory of what we term 'misinformation literacy'.

We set out clear definitions of both what we term broad media literacy, and the narrower sub-field of news literacy, using the theory of news literacy proposed by Vraga et al (2020). We adapt this to apply to the field of misinformation specifically, based on both empirical evidence of the knowledge and skills used by fact-checking organisations and studies of the effects of specifics skills on ability and propensity to identify and reject misinformation. On this basis, we argue that **teaching misinformation literacy, or a specific set of knowledge and skills in six named fields, will increase young peoples' ability to identify misinformation and, in combination with other factors, could increase their propensity to dismiss it as such**.

We argue the six fields of knowledge and skills necessary to misinformation literacy and misinformation literate behaviour relate to: (i) **the context** in which

misinformation and accurate information are produced, (ii) **who creates** misinformation and who creates accurate information, (iii) the main types or forms of **false or misleading content**, and how to identify key features distinguishing this from fair and accurate content, (iv) the processes by which **false and accurate information circulate**, and can thus be identified, (v) the reasons why individuals, ourselves included, **consume and believe false information** and (vi) the **consequences of believing and sharing false information**. We recognise that these areas of knowledge and skills will not, in themselves, be enough to change behaviour and for the teaching to have effect, it must be accompanied by a change in the norm-setting shown by public figures, institutions and traditional and social media in relation to falsehoods and misinformation.

> » **Media literacy barely taught in seven countries studied, only one province includes some elements of misinformation literacy**

Despite the many statements of alarm expressed by leaders across Africa about misinformation or 'fake news' since 2016(Cissé, 2018; Okakwu, 2018; Olewe, 2018), our study finds that **media literacy, even in the broadest sense, was barely taught in six out of the seven countries studied as of June 2020, and no form of misinformation literacy was taught at all except in one province in South Africa**. As we set out in Section 6, only limited elements of the broadly defined media literacy are included in the main state school curricula used in six of the seven countries we studied. Topics taught range from civic education and behaviour in Ghana to self-awareness, empathy and problem-solving in Kenya. As of June 2020, South Africa had the most extensive element of news literacy in its national curricula but with little focus on accuracy. In January 2020, the education department in one province, the Western Cape, introduced teaching of a new syllabus focused on online safety with modules aimed at developing 'click restraint' and how to identify fake websites and false online information. Broader elements of misinformation literacy are not yet reflected in the course. In this report, we set out the obstacles to the introduction and effective teaching of misinformation literacy, starting with a lack of political will, underfunding of schools and poor teacher pay, recruitment and training, bureaucratic challenges and the perception among teachers and planners that curricula are already crowded and misinformation literacy is not a priority.

> » **A misinformation antidote – if the will is there**

Governments, media and academics across Africa and around the world have since 2016 highlighted the actual and potential harm caused by misinformation worldwide. In June 2020, 130 UN member countries called for measures to combat misinformation (Bontcheva & Posetti, 2020). If the will is there, our study shows they have the potential to reduce the harm misinformation can cause, by teaching of misinformation literacy in state-run schools.

Doing so would require providing the necessary teacher training, resources and support to schools. It would need the development of country-appropriate misinformation literacy curricula, developed in partnership with misinformation specialists. It would require teachers' leaders to engage with academics and introduce assessments to test the effects of misinformation literacy at key stages, with benchmarks of misinformation literacy knowledge and skills for different ages.

Politicians, traditional media and tech companies, all the source of much misinformation, all have an enormous responsibility to set norms of good practices of checking information before sharing, correcting false information and transparency about how they work. This can all be done if there is the will to do so.

MISINFORMATION LITERACY AN ANTIDOTE TO MISINFORMATION, IF …

1. Ministers order misinformation literacy to be part of school curricula

2. Ministers ensure the necessary teacher training, resources and support for schools

3. Teachers' leaders engage with the subject, introduce assessments with benchmarks

4. Traditional media and tech firms promote transparency and misinformation literacy on their platforms

5. Public figures and institutions set norms of accuracy and honesty, not spreading false information

> » **A method for teaching misinformation literacy and reducing harmful effects worldwide**

While we believe the evidence set out in this report strongly suggests the likely effectiveness of teaching knowledge and skills in the six fields described, specific to the misinformation context of that country, this has not to date been done. It needs to be tested in practice – with benchmarks established and applied not simply in Africa but across continents worldwide.

2. THE TYPES, DRIVERS AND EFFECTS OF MISINFORMATION

To assess the degree to which any form of media literacy addresses the challenge of misinformation, it is necessary first to establish an understanding of the issue itself. To be effective, media literacy would need to provide the ability to address the different types and drivers of misinformation in circulation, in the country or on the continent concerned. The following concepts thus require explanation here.

2.1. Information disorder as a driver of misinformation

To understand what drives misinformation, it is necessary first to understand the information disorder. First used in 2017 by Dr Claire Wardle and Hossein Derakhshan as an umbrella term for three different forms of information that cause harm (Wardle & Derakhshan, 2017), we use the term in this report to describe the broader dysfunction of the information system we observe on the continent (Cunliffe-Jones, 2022b). The expression in this context refers not only to (i) misinformation or disinformation but also to (ii) the distorted focus of information available to the public and (iii) the denial of easy public access to credible information. As noted by a range of studies and articles, distortions in the focus of information available to the public and the lack of access to credible information on key topics both play a major role in distorting understanding (Cunliffe-Jones, 2022a, 2022b; Epstein & Robertson, 2015; Golebiewski & Boyd, 2019; Kainja, 2020; Mikkelson, 2016; Ndlela & Mano, 2020; Shane & Noel, 2020).

2.2. Eleven ways misinformation distorts our understanding

The sorts of misinformation identified by fact-checkers are only rarely entirely false. The ways in which information distorts our understanding are,in fact, often complex, containing elements of both accurate and inaccurate claims. The judgment of what is fair and accurate information is often a complicated one (Cunliffe-Jones, 2022a; Wardle & Derakhshan, 2017).

The report into misinformation which is part of this series identifies 11 distinct ways in which claims judged by fact-checking organisations to be misinformation can and do distort public understanding: (i) unproven claims stated as known fact; (ii) claims that are outright false; (iii) claims that mislabel or misattribute content such as photographs or videos; (iv) claims that bear an element of truth but overstate or understate a position; (v) claims that bear an element of truth but are misleading in other ways; (vi) claims that are accurate in themselves

but conflate issues; (vii) satire understood as true; (xiii) deliberately fabricated or manipulated content, where the intention is thus clearly to mislead; (ix) imposter content; (x) hoaxes and scams; and (xi) coordinated inauthentic behaviour – not misleading content as such but patterns of online behaviour intended to distort understanding (Cunliffe-Jones, 2022b; Douek, 2020).

Understanding the complex nature of misinformation is recognised as essential to the ability to properly distinguish misinformation from accurate information, by fact-checking organisations today (Cunliffe-Jones, 2022a) and an essential part of misinformation literacy.

2.3.   Who creates misinformation, where and on what topics

Although the main focus of much discussion of misinformation since 2016 is false information spread by users of social media, studies show that who creates misinformation, where we find it and what topics it affects are all more varied than is often understood (Cunliffe-Jones, 2020; Newman et al, 2020). The study of misinformation in Africa that is part of this series identifies a wide range of creators of misinformation from traditional media and politicians, to public institutions, business leaders, traditional and religious leaders, special interest groups, offline community networks and ordinary social media users (Cunliffe-Jones, 2022b). The study finds misinformation circulates in a broad spread of different channels from traditional media and social media platforms or messaging apps, to speeches in parliament or at public events, through traditional community networks and on the product labels for medications. It also shows misinformation touches on numerous topics from accidents and disasters to crime and justice, health, politics, the economy and the media (Cunliffe-Jones, 2022b). Understanding who spreads misinformation, where it can be found and the topics it touches on is again considered essential by fact-checking organisations to being able to properly identify misinformation as such (Cunliffe-Jones, 2022a).

2.4.   What drives misinformation and why we may believe and share it

To properly be able to identify misinformation as such, and distinguish it from accurate information, it is also important to understand what may drive it, and why we may believe and share it ourselves. The research reviewed for this report shows a diverse set of elements driving the creation and spread of false information on the continent. These elements range from psychological factors such as motivated reasoning and strong emotional responses to particular stimuli (Duffy, 2018; Madrid-Morales et al, 2021; Vicol, 2020), to more calculated political motivations driving both politicians' false claims in parliament or in speeches and active disinformation campaigns (Burke & Harding, 2019; Cunliffe-Jones, 2022b; Oborne, 2005).

Financial incentives drive the creation of both scams (Cable et al, 2020) and much misinformation that serves as clickbait (Cunliffe-Jones, 2022b). The operating systems of many social media platforms both promote often misleading material to which users show strong emotional responses (Statt, 2020) and provide financial incentives that can drive misinformation. This is one reason critics argue larger tech firms have obligations to financially support public and civil society initiatives to mitigate effects of misinformation. In addition, people and institutions often make mistakes and fail to verify information they originate or share.

2.5.   *Understanding the effects of misinformation may change our behaviour*

On the basis of the research reviewed in this report, we argue above that for people to be able to identify misinformation as such, it is necessary to understand the types of misinformation in circulation, who creates and spreads it, the context in which it emerges, where it circulates and why we and others may believe it to be true and share it.

We know, however, from many studies over the years that understanding of a topic does not automatically lead people to adopt behaviour to address the challenge or challenges it poses (McQuail, 2010). As set out in Icek Ajzen's Theory of Planned Behaviour (Ajzen, 1991) for knowledge and skills to affect behaviour, they must be combined with (i) the individuals' attitudes to the perceived behaviour, (ii) social norms relating to the behaviour and (iii) the individuals' perceived ability to control the behaviour. In this case, where the behaviour concerned is the acceptance and sharing of information known to be false, we argue that, although not understanding its harmful effects will not necessarily be sufficient to deter the conduct without strong pro-accuracy social norms, understanding the consequences of misinformation may contribute to the sought-after practices.

Public discussion of the effects of misinformation has often focused on ways in which misinformation may or may not distort the outcomes of political elections or cause harms to public health. The forthcoming study of misinformation that is part of this series identifies a far wider range of fields in which harmful effects can be identified. These comprise (i) physical harms – from vigilante and gender-based violence to harms to individuals' and public health; (ii) harms to mental health – from personal distress to public alarm; (iii) harms to fairness, social cohesion – from entrenching negative stereotypes to enflaming social divisions; (iv) harms to the justice system – from distorting particular cases, to judicial policy; (v) harms to the political system – from suppressing voting, and undermining trust, to distorting the focus of debate; (vi) harms to business, economy – from company reputations to economic policy; (vii) harms to the environment – from endangering wildlife to distorting policy

focus; (viii) harms to international relations – from distorting public understanding to government policy; (ix) harms to individuals' finances, practical harms – from financial loss to identity theft, and the spreading of computer viruses; and (x) harm through distorted understanding of the natural world – miscellaneous effects such as discrimination and more.

3. DIFFERENT TYPES OF MEDIA LITERACY: DIFFERENT EFFECTS

Taking account of the types, drivers and effects of misinformation, we can then ask how well they are addressed by the sorts of media literacy taught today.

3.1. Many forms of literacy demanded of young people

Around the world, there are many different forms of literacy demanded of young people from written literacy to digital literacy (Hobbs, 2019; Snelling, 2017),[4] health literacy (NLM, Undated),[5] news literacy (Kajimoto & Fleming, 2019; Vraga et al, 2020)[6] and more. In some countries, the practice of educating students to reduce susceptibility to false information is a new one. In others, the goal was set out decades ago. 'There are three ways to deal with propaganda – first, to suppress it; second, to try to answer it by counterpropaganda; third, to analyse it', the founder of the Institute for Propaganda Analysis (IPA), Clyde R. Miller, said in a lecture in 1939 in New York (Schiffrin, 2018). Miller was referring not only to his organisation's frequent newsletters but also to its programme to educate schoolchildren in what we would today call a form of media or news literacy skills. The IPA's educational director, Violet Edwards, described the schools' programme as seeking to instil a scientific mindset of fact-finding, logical reasoning and critical thinking (Schiffrin, 2018). The knowledge and skills needed to acquire this mindset remained an open question.

3.2. UNESCO's promotion of media and information literacy

In the post-war years, the range of media literacy concepts has grown. Around the world, the main driving force promoting what it calls Media and Information

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4   There are different definitions of digital literacy. One that is widely used relates digital literacy to knowledge and skills in four fields: (i) computer skills and access; (ii) skills of creating and sharing content; (iii) evaluating the credibility of information found online; (iv) online social responsibility.

5   Health literacy is defined by the US National Library of Medicine as 'the degree to which individuals have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions.'

6   Similarly, there are different definitions of news literacy. Kajimoto and Fleming identify an understanding of the term as 'critical-thinking skills necessary to the evaluation of news reports and the ability to identify fact-based quality information, encourage active participation and engagement among well-informed citizens'. For this report, we use the definition proposed in 2020 by Vraga et al of news literacy as 'knowledge and skills regarding content, systems and practices related to news production'.

Literacy (MIL) has been the UN Educational, Scientific and Cultural Organisation (UNESCO). In January 1982, UNESCO convened an International Symposium on Media Education at Grunwald, Germany, bringing together educationalists, researchers and communicators from 19 countries. The 'Grunwald Declaration on Media Education' set out a broad definition for the field, declaring media literacy to consist of 'developing the knowledge, skills and attitudes which will encourage the growth of critical awareness and, consequently, of greater competence among the users of electronic and print media' (UNESCO, 1982). As US educationalist Patricia Aufderheide noted in 1993, this definition was considered broad even then and expected to grow broader still. 'The fundamental objective of media literacy is critical autonomy in relationship to all media,' she said, and yet the term media literacy was already then being applied much more extensively. 'Emphases in media literacy training range widely, including informed citizenship, aesthetic appreciation and expression, social advocacy, self-esteem and consumer competence. The range of emphases will expand with the growth of media literacy', she predicted (Aufderheide, 1993). In 2013, UNESCO identified this new, broader concept as MIL, 'bringing together Information Literacy and Media Literacy, along with Information and Communication Technology (ICT) and Digital Literacy'. UNESCO defined the concept as 'a set of competencies that empowers citizens to access, retrieve, understand, evaluate and use, create, as well as share information and media content in all formats, using various tools, in a critical, ethical and effective way, in order to participate and engage in personal, professional and societal activities' (UNESCO, 2013, p. 29).

3.3.   Identifying media literacy sub-types to better understand effects

For Robert Keener, a researcher at the University of Washington, the concept of 'media literacy' as taught today around the world is so broad as to 'lack all conceptual rigour'[7]. In a forthcoming study of media literacy in US schools, Keener and West identified six main themes present in curricula across the country in 2020: (i) traditional media literacy, including news literacy; (ii) digital citizenship; (iii) digital literacy; (iv) informational literacy; (v) media arts; and (vi) technological media literacy (Keener & West, 2021). These add to the concepts such as informed citizenship, social advocacy, self-esteem and consumer competence, identified earlier by others such as Aufderheide and taught as civics or media literacy in the United States and in other countries.

This lack of clarity and agreement on the range of themes covered by, and intended outcomes of, media literacy teaching makes it challenging for scholars to assess

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7   Email to authors July 2020.

either the extent of teaching of 'media literacy' or its effects. In 2013, UNESCO published a detailed framework for assessment of MIL competencies around the world (UNESCO, 2013, pp. 41–64). However, in a 2019 report, Huguet et al argued that many of the ways of measuring the effects of media literacy programmes do not capture their effects fully and are difficult to compare. Goals and objectives differ. Some studies rely on self-reporting, whereas others use multiple choice assessments and still others rely on performance-based assessments (Huguet et al, 2019). To properly assess the effects of any one particular media literacy sub-type, across multiple countries, it would be necessary to clearly define both outcomes sought and means of measuring effects.

3.4.   News literacy as knowledge and skills in five domains of news

In 2020, researchers Emily Vraga, Melissa Tully and colleagues proposed a new definition of the media literacy sub-type news literacy: 'knowledge of the personal and social processes by which news is produced, distributed, and consumed, and skills that allow users some control over these processes' (Vraga et al, 2020). News literacy, according to this, consists of knowledge and skills across five clearly defined domains: (i) context: the social, legal and economic environment in which news is produced; (ii) creation: the process in which journalists and others engage in conceiving, reporting and creating news stories and other journalistic content; (iii) content: the characteristics of a news story or piece of news that distinguishes it from other types of media content; (iv) circulation: the process through which news is distributed and spread to potential audiences; and (v) consumption: the personal factors that contribute to news exposure, attention and evaluation. This is a compelling theory. At the same time, if the goal is the ability to identify inaccurate information, the subject is both too broad to apply perfectly to misinformation, in that it extends to more than the accuracy of news, and too narrow in that it is limited to 'news' which – even broadly defined – does not cover all the types or channels in which misinformation circulates (see Section 2.3).

3.5.   Misinformation literacy – five domains of specialist knowledge and skills

Based on our review of a wider series of studies (Amazeen & Bucy, 2019; Duffy, 2018; Keener & West, 2021; Van der Linden et al, 2020; Vicol, 2020; Vraga et al, 2020), and the knowledge and skills identified by fact-checking organisations (Cunliffe-Jones, 2022a), we propose a version, or sub-type of news literacy with its own set of knowledge and skills, adapted to apply specifically to the field of misinformation.

As Keener and West note in their study of media literacy in the United States, news literacy and media literacy themes unrelated to misinformation can be of great social value in their own right without having any clear effect on susceptibility to misinformation. 'We are not saying that digital citizenship or media arts are not important. However, the many different concepts in media literacy education have not addressed many students' inability to reason effectively with information online' (Keener & West, 2021). Even teaching the existence of false information without the necessary degree of detail does not ensure students can identify false statements correctly, a UK study found (National Literacy Trust, 2018).

By contrast, studies by Amazeen and Bucy, Van der Linden et al, Vicol and others suggest teaching specific knowledge and skills relevant to misinformation can indeed produce what we would call misinformation literacy effects: the ability or propensity to identify misinformation as such (Amazeen & Bucy, 2019; Van der Linden et al, 2020; Vicol, 2020). Furthermore, the proposed knowledge and skills are coherent with the knowledge and skills identified, empirically, by fact-checkers as necessary to distinguish false or misleading information from information that is fair and accurate (Cunliffe-Jones, 2022a). We propose to define this new subtype of news literacy as 'Knowledge of the forms that misinformation and accurate information take, the processes by which they are produced or emerge, are distributed and consumed, by whom, where and on what topics, and the skills to distinguish one from the other'.

3.6.   Misinformation literacy behaviour – a sixth domain of knowledge required

Numerous studies tell us that knowledge alone does not often change behaviour. Icek Ajzen's Theory of Planned Behaviour (Ajzen, 1991) proposes that, for knowledge and skills to influence behaviour, they must be combined with (i) individuals' attitudes to the perceived behaviour, (ii) social norms relating to the behaviour and (iii) individuals' perceived ability to control the behaviour. Put another way, knowledge and skills are necessary to identify, but insufficient to ensure that people dismiss, false information as such. The social norms set by public figures, institutions and traditional and social media related to false information are major factors in shaping behaviour. Evidence drawn from the study of misinformation that forms part of this series suggests knowledge of the harmful consequences of spreading and believing some forms of false information may influence misinformation-related behaviour (Cunliffe-Jones, 2022b).

4. MISINFORMATION LITERACY – THE SIX FIELDS OF KNOWLEDGE AND SKILLS TO IDENTIFY AND DISMISS FALSE INFORMATION

As set out above, in Section 2, misinformation comes in many forms. It ranges from false statistical claims made by ministers in parliaments, to mislabelled photos and videos shared online or on messaging apps, content that falsely purports to come from someone else (imposter content), unproven claims presented as known fact, long-standing myths circulating in community networks and false medical claims made on the labels of unregulated medications. It is a distinct field of information distinguished not so much by form, format or creator as by its quality of inaccuracy; often difficult to detect. And just as misinformation is a distinct field, so the ability to identify and understand misinformation requires a distinct set of knowledge and skills too.

As set out below, the knowledge and skills that help to consistently identify misinformation include understanding of the context in which misinformation emerges, who creates and spreads it, the types of misinformation, where it circulates, and why people believe it to be true and share it. Knowledge of the harmful effects certain types of misinformation may have, may also make people more likely to dismiss false information as such. This is not proven.

4.1. Context: knowledge of the contexts – social, cultural, economic, political, informational and events – in which false and accurate information are produced

Knowing in advance the contexts in which to expect to see a surge in false information, 'can reduce susceptibility to misinformation across cultures' studies published in 2020 showed (Van der Linden et al, 2020). This element of forewarning, described by Van der Linden as 'pre-bunking', is built into the training practices of fact-checking organisations across Africa for new staff (Cunliffe-Jones, 2022a).

Studies of misinformation show that particular contexts – social, cultural, economic or political upheaval (Cunliffe-Jones, 2022b; Hill, 2020; Larson, 2018), information blackouts, data deficits (Golebiewski & Boyd, 2019; Rydzak, 2019; Shane & Noel, 2020) and worrying natural events such as floods, fires or health crises accurately predict a surge in misinformation and the type of misinformation to be expected. This was demonstrated recently with the wave of false and misleading health information observed worldwide during the 2020 Covid-19 pandemic (Brennan et al, 2020; Thomas, 2020). Teaching this knowledge of the contexts and

forms in which misinformation is to be expected is thus an important element of misinformation literacy.

4.2. Creation: knowledge of the types of people and institutions found to create false and accurate information, their different motivations and the skills to identify those who produce specific information online

To identify misinformation and distinguish it from accurate information consistently it is also important to know the types of people and organisations who create or promote false information, those more likely to produce accurate information, and their different motivations. Studies show the public often see information from certain types of individuals or organisations as more reliable than it is (Newman et al, 2020; Vicol, 2020; Wasserman & Madrid-Morales, 2018). Learning the types of individuals and institutions who regularly create false information, accurate information, and their different motivations and processes is critical to knowing when to question information on the basis of the source (Amazeen & Bucy, 2019).

At the same time, much online misinformation is so-called imposter content, concealing the name of its true producer and appearing in the name of another person or organisation. The skills to identify who created information, where, when and potentially why are vital to demasking this type of content. Misinformation literacy needs to include this knowledge of who creates false information, who creates accurate information, and the technical skills to identify who created information when that is not clear.

4.3. Content: knowledge of the difference between facts and opinions, the different ways information can mislead and the skills and practices to distinguish accurate and inaccurate information

In a survey in South Africa, 70% of respondents said they 'struggle to separate fact from fiction online' (Roper et al, 2019), and research from the United States shows members of the public often struggle with even the 'basic task of differentiating between factual and opinion news statements' (Mitchell et al, 2018). Misinformation takes many forms and studies of the training practices of fact-checking organisations show knowledge and skills considered essential to identifying false information cover understanding of a wide range of content types: (i) the differences between a factual claim and an opinion, (ii) the different ways false or misleading information distorts understanding, (iii) different practices to distinguish an accurate from an inaccurate source, (iv) numeracy skills such as basic statistics and numeracy, (v) technical skills to identify and retrieve information online and offline and (vi) technical skills in the verification of information online from the authentication of an image to the location shown (Cunliffe-Jones, 2022a).

Misinformation literacy needs to include this range of knowledge and skills to be effective.

4.4.   Circulation: knowledge of the processes by which accurate and inaccurate information circulates and what drives people to share information

To reduce our susceptibility to misinformation, it is necessary to understand when and how different elements of traditional media and social media do and do not verify the information they distribute and why individuals and institutions offline may share false information. In 2019, a study by the US researchers Michelle Amazeen and Erik Bucy provided evidence that 'possessing a working knowledge of how the news media operate aids in the identification and (reducing the) effects of fabricated news' (Amazeen & Bucy, 2019). Evidence from the study of drivers of misinformation that is part of this series suggests this applies equally to the processes that drive circulation of information on social media and in offline settings. For example, knowing the possible financial or political motivations of those posting false information can reduce its perceived credibility (Cunliffe-Jones, 2022b). And knowing where and when to expect accurate and inaccurate information and why may also contribute to reducing susceptibility to false claims (Van der Linden et al, 2020). To be effective, misinformation literacy needs to include this range of knowledge.

4.5.   Consumption: knowledge of the reasons we as individuals may believe false or misleading information to be true

A variety of conscious and unconscious biases in the way we think make us all susceptible to believing certain types of false information or to share it even when we do not necessarily believe it to be strictly true. This is as much the case in Africa as it is elsewhere (Madrid-Morales et al, 2021). We are often unaware of these biases. As Professor Bobby Duffy noted in 2018, polling data from around the world finds people often believe misinformation is something that fools others, not themselves (Duffy, 2018). This risks stopping us from asking questions that are needed. US researcher Robert Keener, for his part, argues that the ability to distinguish accurate and inaccurate information is deeply tied to understanding one's own biases, shaped at least in part by one's social identity[8]. Knowing the reasons why we as individuals may believe false or misleading information to be true is essential to misinformation literacy.

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8   Email to authors October 2020.

4.6. Consequences: knowledge of the different forms of actual and potential harm caused by believing and sharing false and misleading information

It is long acknowledged that, almost whatever the topic, acquiring knowledge alone does not automatically lead to a change in behaviour. As set out in Icek Ajzen's Theory of Planned Behaviour (Ajzen, 1991), for knowledge and skills to affect behaviour, they must be combined with (i) the individuals' attitudes to the perceived behaviour, (ii) social norms relating to the behaviour and (iii) the individuals' perceived ability to control the behaviour. The forthcoming study of misinformation that is part of this series identifies a wide range of fields in which harmful effects can be identified, knowledge of which, the study suggests, *may* have the potential to influence information sharing behaviour (Cunliffe-Jones, 2022b). We would therefore argue knowledge of the different forms of actual and potential harm that can be caused by sharing and believing misinformation is a potentially important element of misinformation literacy on this basis.

5. MEDIA LITERACY TEACHING AROUND THE WORLD

Following the surge in concern worldwide since 2016 about the effects of misinformation, educators and commentators on every continent have proposed the use of media literacy as a form of vaccine or antidote to the harms caused by false information (Cissé, 2018; Jakubu, 2017; Seargeant & Tagg, 2018). In the United States and other countries, schools have introduced courses focused specifically on misinformation (Barron, 2017; Tugend, 2020). In countries including Finland (Charlton, 2019; Henley, 2020) and Norway[9], programmes aimed at reducing the effects of misinformation have been introduced at a national level. Fact-checking organisations and civil society groups have launched a range of media literacy initiatives (Chequeado, Undated)[10] as have social media platforms (Costello, 2019; Facebook, 2020). The nature and likely efficacy of the different initiatives varies greatly.

5.1. United States – a patchwork of approaches

In the United States, education policy is devolved to the state level and until recently devoted little funding to media literacy; a mere $12 million between 2006 and 2016 (Fleming, 2016). In the wake of the rise in concern in 2016, more schools started promoting media literacy as an antidote to misinformation (Barron, 2017; Rosenwald, 2017; Tugend, 2020).

A study by Huguet et al in 2019 found the media literacy programmes offered in US schools tend to fall into three broad categories: (i) those that look at the 'economic motivations that undergird popular media and information streams', (ii) education that relates to democracy and civic life and (iii) efforts to 'evaluate the quality of information' – not exclusively on grounds of accuracy (Huguet et al, 2019). A forthcoming study by researchers Robert Keener and Jevin West identified six categories: (i) traditional media literacy, including news literacy; (ii) digital citizenship; (iii) digital literacy; (iv) informational literacy; (v) media arts and (vi) technological media literacy. While 'every state had at least some expression of media literacy … states are not emphasizing the type of powerful knowledge that students need to identify fact from fiction in the digital age' their study concluded (Keener & West, 2021).

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9   See the Norwegian news literacy teaching programme Tenk: https://tenk.faktisk.no.

10   This database, created by the Argentinian fact-checking organisation Chequeado, was accessed on 1 October 2020. It details misinformation literacy initiatives by fact-checking initiatives and others https://educheckmap.factcheckingday.com/dist/index.html#/projects

5.2.   Europe – some countries committed, but many weak spots

Governments across Europe have promoted media literacy education in schools across the continent for decades (Aguadad et al, 2016). Denmark, Greece, Finland and France were judged as among the more advanced EU countries in media literacy in 2017 (Frau-Meigs et al, 2017). In Finland and Norway[11] media literacy teaching was updated following the rise in concern in 2016 to include a focus on identifying misinformation, with course modules designed in partnership with experts from fact-checking organisations (Charlton, 2019; Henley, 2020). An EU expert group issued in 2018 a call for a new focus in schools on MIL (HLEG – EU High Level Expert Group, 2018). The Open Society Institute's Media Literacy Index in 2019 rated Finland as the country most prepared to deal with the impacts of disinformation (OSIS, 2019).

However, the effectiveness reported in Finland is not replicated everywhere. Education policy is left to national governments, approaches vary and resources and course content differs. In the United Kingdom, the official communications regulator OFCOM has been charged since 2003 with promoting media literacy. To the extent that if the goal has been teaching students to identify false information, it has had limited success (National Literacy Trust, 2018; Vicol, 2020). A 2017 study found that policy frameworks, funding and evaluation of media literacy programmes were European programmes' weakest aspects (Frau-Meigs et al, 2017).

5.3.   Latin America – digital skills, no focus on misinformation

Civil society organisations across Latin America have sought to promote media literacy for decades (Aguadad et al, 2016). However, while schools in countries such as Peru and Mexico do teach elements of digital literacy such as search and digital skills, broader media or misinformation literacy themes do not feature in most school curricula, a 2020 study found (Vicol, 2020). Initiatives by academic and civil society organisations are discussed in the next section.

5.4.   India – limited teaching of media literacy despite growing demand

There is at present, only limited media literacy teaching in most schools across India, despite increasing demand for its inclusion. The National Council of Educational Research and Training has included some reading on the role of the media in course readings for social and political science subjects (Roy, 2017). However, attention to media literacy is limited and schools that do include broader media literacy themes tend to work with civil society organisations that focus on training

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11   See the Norwegian news literacy teaching programme Tenk: https://tenk.faktisk.no

young people to create radio projects, run mock news coverage or theatre performances. As of June 2020, themes of misinformation literacy did not feature in most school programmes.

5.5.   East Asia and Southeast Asia – many governments wary of media literacy

In Singapore, education policy is set by the national ministry of education. Media literacy is included in the curriculum with an emphasis on the skills of information access, a critical stance towards information and media content and the notable absence of any mention of creative, expressive production (Weninger, 2017). The revised 2020 English Language Syllabus's declared aim is to develop pupils into 'discerning readers' who are well-informed and well-equipped to 'distinguish fact from falsehood by processing and evaluating information, critically and with discernment according to purpose, audience, context and culture'. As with other countries, the question of how this is taught, in practice, is another matter. In Singapore, strict government control of the media extends to the government identifying and ordering the takedown of what it declares false information, raising questions about the objectivity with media literacy is taught. A 2020 review of the teaching of media literacy in five East and Southeast Asia countries – Indonesia, Japan, Malaysia, the Philippines and Thailand – for UNESCO recognised this issue. It is clear that at this stage what MIL education entails in each country is not aligned, the survey found. 'With restrictive laws and regulations that essentially curtail speech, coupled with limited press freedom, it is not easy for teachers in Malaysia and Thailand to discuss how to critically evaluate information and media content … in classrooms', the study found. By contrast 'free speech is by and large well protected' in Japan, but in the Philippines, 'the polarizing nature of the current political climate and ongoing attacks on journalists discourage conversations'. Across the region: 'Applying critical thinking skills to decode the meaning of information and media messages could result in questioning or challenging authoritative voices in some cases, including those of teachers, which can be considered disrespectful in all countries', the study concluded (Kajimoto et al, 2020).

5.6.   Media literacy centres, library associations, fact-checking organisations

Outside the formal education system, media literacy centres, library associations and fact-checking organisations in Africa, the United States, across Europe, Asia and Latin America have taken a growing role in promoting and teaching media literacy. Often they have focused on using fact-checking techniques to identify misinformation. In the United States, like other regions, these efforts tend to be run on a relatively small scale, fragmented and include a wide range of different priorities (Head et al, 2020). Outside the United States, UNESCO continues its work seeking to

promote broad media literacy through the support provided to regional media literacy centres[12], staging events and developing media education kits for teachers, students, parents and professionals. In Africa, fact-checking organisations such as Africa Check, Dubawa and PesaCheck operate media literacy programmes in schools and on social media (Cunliffe-Jones, 2022a)[13]. In Europe, a third of media literacy networks are cross-sector collaborations targeting youths and tending to bypass older population groups, and with uncertain outcomes (Council of Europe, 2016). In Latin America, fact-checking organisations such as Argentina's Chequeado and Mexico's Verificado conduct workshops and talks to enhance both awareness and skills like critical thinking and data literacy[14]. In countries such as Taiwan, governments get involved in out of school programmes promoting media literacy too (Huang, 2020).

5.7.   Traditional media and social media platforms

The role taken by traditional media organisations in media literacy projects tends, with exceptions such as programmes run by major organisations such as the BBC[15] to be limited, in part by lack of resources and in part by lack of focus. By contrast, global social media companies, rich in resources and stung by criticism of the harm false and hateful content on the platforms can cause, started recently to both run media literacy messaging on their platforms and provide funding support to media literacy programmes from independent fact-checking organisations and media literacy groups. In 2019, for example, Twitter partnered with UNESCO to produce a handbook for schools to 'equip younger generations with media literacy skills… enabling them to ask the right questions about content' (Costello, 2019). Meanwhile Facebook developed a media literacy campaign on its platform in partnership with fact-checking organisations to ask people to challenge information they see by asking a series of basic questions about the source and accuracy of the content (Facebook, 2020). Given the scale of the tech companies' operations, these efforts to date appear limited in terms of ambition, adding to wider criticisms made of their efforts to combat the problems that misinformation on their platforms cause (Chee, 2020).

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12   Disclosure: co-authors Dr Chido Onumah and Wallace Gichunge run the centres for the promotion of media and information literacy in Nigeria and Kenya, respectively, with support from UNESCO.

13   Disclosure: lead author Peter Cunliffe-Jones is the former director of Africa Check.

14   See this database of misinformation literacy initiatives by fact-checking initiatives and others https://educheckmap.factcheckingday.com/dist/index.html#/projects.

15   See for example: http://www.bbc.co.uk/learning/overview/about/digitalliteracy.shtml.

6. MEDIA LITERACY TEACHING IN SEVEN SUB-SAHARAN COUNTRIES

As of June 2020, broad media literacy was barely taught in seven sub-Saharan countries we studied for this report, and just one province in South Africa included any elements of what we identify as misinformation literacy in school teaching. Compared to both the initiatives seen pre-World War II in the United States, and from the 1980s onward in Europe and elsewhere, efforts to promote the teaching of media literacy in Africa are relatively recent. With the launch of the Pan-African Alliance on Media and Information Literacy, in Abuja, Nigeria, in June 2013, advocates of media literacy, supported by UNESCO and others, sought to generate more progress with a flurry of regional meetings and initiatives. However, while leaders such as the president of Senegal demanded a plan in 2018 for schools to counter the spread of false information (Cissé, 2018) and Nigeria's information minister at the same time called on Nigerians to learn about false information (Okakwu, 2018), these calls led to little action. By contrast, the study of laws on false information that is part of this series (Cunliffe-Jones et al, 2021) shows the near doubling of legal measures introduced against misinformation in 11 sub-Saharan countries from 2016 to 2020, showing where political priorities lie.

6.1. Media literacy is barely taught in seven countries, misinformation literacy taught in only one province

To assess the teaching of media or misinformation literacy in the seven sub-Saharan countries surveyed, the research team reviewed the curricula most widely used in state-run primary and secondary schools for the terms 'MIL', 'news literacy' and 'fake news' and related terms, or French-language equivalents, and terms related to key elements of the standard definitions of broad media literacy. Activities suggesting the development of critical thinking skills were also identified. The team focused on curricula taught in state-run schools, rather than those taught in the private sector, because the largest share of the school-age population attend state-run schools and private schools do not follow one main curricula. Across the countries studied, the team found that, while officials responsible for setting curricula in some countries expressed interest, in practice the curricula taught still include barely any elements of broad media literacy and save for in one province of South Africa, no teaching of misinformation literacy at all.

TABLE I ELEMENTS OF (1) MEDIA AND INFORMATION LITERACY AND (2) MISINFORMATION LITERACY IDENTIFIED IN STATE SCHOOL CURRICULA AT JUNE 2020			
Country	Media and Information Literacy in June 2020	Misinformation Literacy in June 2020	Plans for June 2020
Cote d'Ivoire	**New curriculum 2018/2019** • ICT/digital skills • Freedom of expression/media • News article formats	**New curriculum 2018/2019** • Nothing specific	**No changes** known to be planned
Ghana	**Long-standing curriculum** • Civic education • Behaviour to others	**Long-standing curriculum** • Nothing specific	**No changes** known to be planned
Kenya	**New curriculum 2019** • Self-awareness • Empathy • Critical thinking, problem-solving • Communication and collaboration (new) • Digital literacy (new)	**New curriculum 2019** • Nothing specific	**Kenya Institute of Curriculum Development** declares interest in media and information literacy
Nigeria	**Long-standing curriculum** • ICT/computer science skills	**Long-standing curriculum** • Nothing specific	**Curriculum authority NERDC** in talks on proposals.
Senegal	**Long-standing curriculum** • News article used as sources • Visual styles of different media	**Long-standing curriculum** • Nothing specific	**No changes** known to be planned
South Africa	**Long-standing curriculum** • Self-esteem and bullying • Critical thinking, problem solving • Responsible citizenship • Mass media formats • Use of formats to stereotype and mislead • Accuracy or biases of historical sources • Social effects of technology • Media's role, media freedom	**Long-standing curriculum** • Identifying hoaxes **New curriculum elements Western Cape 2020** • 'Click restraint' • Identifying fake websites, false information • Harms done by misinformation • Political misuse of social media	**Other provinces have discussed adopting new elements**
Uganda	**Long-standing curriculum** • Community news • News terminology • Online search • News formats, biases	**Long-standing curriculum** • Nothing specific	**No changes** known to be planned

NERDC = Nigerian Educational Research and Development Council.

6.1.1. COTE D'IVOIRE

6.1.1.1. Structure of the school system and curriculum

In Cote d'Ivoire, the education ministry, the *ministère de l'éducation nationale*, sets education policy and has oversight of standards whereas local authorities have responsibility for running schools and the provision of services. According to law, children start primary school aged between 5 and 7 years and education remains

compulsory up to 16, however the estimated average time spent in school is 5.2 years. See Section 7.2 for details. The most recent figures show that, as of 2014/2015, three quarters of students attended state-funded schools with the share attending private sector schools share higher among secondary-age than among junior-age students.

6.1.1.2. New curriculum includes digital skills and news formats

Cote d'Ivoire developed a new national plan for education in 2017, as part of efforts to move the country beyond the divisions of the 2010–2011 civil war. This introduced limited elements of media literacy education into the secondary school curriculum. Between the ages of 12 and 15 students learn basic digital, or ICT, skills under the new programme, including how to access and produce information online and, in theory, the importance of freedom of information and freedom of expression (*Ministère de l'éducation Nationale du Cote d'Ivoire*, 2017). In 2019, Cote d'Ivoire was reported to be the only country of francophone West Africa providing any teaching in digital skills (Corroy & Yanon, 2019). In the final compulsory year, when students are on average 15, the curriculum provides 18 hours of lessons covering news writing and production techniques in traditional media. After the new programme was launched in the 2018/2019 school year, plans were announced to train teachers in digital skills and establish digital labs in schools but neither had been put into practice at the time of writing.

6.1.1.3. No elements of 'misinformation literacy' taught or planned

Despite the changes, the new curriculum does not include any focus on the accuracy of information and teaches none of the specific knowledge and skills we identify as required for misinformation literacy. What efforts there have been to train young people in skills related to misinformatio in Cote d'Ivoire have been driven largely by UNESCO.

6.1.2. GHANA

6.1.2.1. Structure of the school system and curriculum

The National Ministry of Education sets education policy and has ultimate oversight of standards; however, multiple institutions, such as the National Teaching Council and the National Inspectorate Board, have been set up to help in policy-making and oversight. Responsibility for provision lies at the district level. The National Council for Curriculum and Assessment sets the curriculum. Children start their pre-schooling at the age of 4 years and it is estimated that on average children spend 7.1 years in school. See details in Section 7.2. Around 75% of students attend state-run schools.

6.1.2.2. Curriculum includes civic education and personal behaviour

The only real aspects of broad media literacy identified in our review of state school curricula at the time of writing were civic education and behaviour. The first major attempt to have a national conversation on media literacy in Ghana took place in August 2017 during a symposium organised by the School of Information and Communication Studies, University of Ghana, in partnership with UNESCO. The symposium became an annual event but has made little progress to date with no plans announced, as of June 2020, for changes to the curriculum.

Media literacy is taught at Ghana's main journalism training centres (the Ghana Institute of Journalism, the African University College of Communications and the University of Ghana), and events promoting media or news literacy have been organised by a range of non-governmental organisations such as the Africa Centre for Media and Financial Literacy, Ghana Fact and the Media Foundation for West Africa.

6.1.2.3. No elements of misinformation literacy taught or planned

At the time of writing, only limited elements of broadly defined media literacy and no elements promoting misinformation literacy could be identified in the curricula for junior or secondary schools in Ghana. None were reported as planned.

6.1.3. KENYA

6.1.3.1. Structure of the school system and curriculum

In Kenya, the Ministry of Education sets education policy and has oversight of standards. Curricula are set by the Kenya Institute of Curriculum Development. Under Kenya's Universal Access to Basic Education law, children can start schooling earlier but most start at 6 years. Accordimg to the law, primary and secondary schooling are compulsory. In practice, however, according to Our World in Data, children spend on average 6.5 years in schooling (see Section 7.2 for details).

6.1.3.2. New curriculum includes digital literacy and critical thinking

Kenya's Ministry of Education launched in 2017 a reform of the national curricula for early learning, primary and secondary schools and teacher training. The new 'Kenya Basic Education Curriculum Framework' was introduced in January 2019 for early learners and rolled out for older age groups progressively. Curriculum support materials were developed for use in both state-run and private sector schools that choose to adopt it.

The previous curriculum, introduced in 1984, included the broad media literacy skills of self-awareness, empathy and problem-solving. The new curriculum introduced seven broad competencies including the fields of 'communication and

collaboration', teaching how people use messages across different contexts and media, and 'digital literacy', providing basic digital skills to search, evaluate and use information online. In form two, aged 16 on average, students receive 8 hours of lessons on the development of means of communication, as part of their history and government course. The curriculum lists critical-thinking and problem-solving as intended core competencies with the hope that learners will 'use logic and evidence to arrive at conclusions'.

6.1.3.3. Curriculum body considering misinformation literacy

Education officials hope that the new curricula will result in some 'media literacy outcomes'. John Kimotho, director of educational media at the Kenya Institute of Curriculum Development, said in an interview for this report. However, at the time of writing, the curricula do not directly address the challenge of misinformation, he agreed.

The Institute recognises the threat posed by misinformation is growing and needs to be addressed. 'It is now time for introduction or mainstreaming of MIL in its raw format in the curriculum … I do not think we'll want to miss the bus if we have to address the problem of misinformation and disinformation among the citizens,' he said[16].

6.1.4. NIGERIA

6.1.4.1. Structure of the school system and curriculum

In Nigeria, the Federal Ministry of Education sets education policy at the national level. Responsibility for schools at the secondary level is split between federal and state authorities while local governments are, in theory at least, responsible for primary schools. Curricula are set by the Nigerian Educational Research and Development Council (NERDC), a parastatal under the education ministry. Children start primary school at 6 years, in theory, though in practice some start younger. Schooling is compulsory by law for 9 years but in practice it is estimated that children spend on average 6.2 years in school (see Section 7.2 for details). The number of children attending state-funded schools varies greatly across the country. While across the country, a majority attend state-run schools, the share attending private sector schools is higher in the south than in the north.

6.1.4.2. New curriculum includes Information and Communication Technology skills, no other MIL competencies

The Nigerian school curriculum, recently approved for junior and senior secondary schools, featured as of June 2020 limited teaching of ICT/computer

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16   Interview with John Kimotho 6 May 2020.

science skills, including use of the Internet and search engines and data processing, but no other elements of broad media literacy. The absence of any elements of news or misinformation literacy from schools continued despite the efforts of a series of initiatives since 2004 aimed at promoting media literacy in schools and the formation of the African Centre for Media and Information Literacy (AFRICMIL).

In 2017, there was a fresh attempt to push MIL into the school curriculum in Nigeria with the establishment of the Media and Information Literacy Coalition of Nigeria (MILCON), supported by UNESCO. MILCON was in 2020 in discussions with the Nigerian Educational Research and Development Council on the development of an MIL curriculum for schools in Nigeria. If or when a curriculum is agreed, it would then need to be approved by the education ministry. This is normally a lengthy process. As of June 2020, the only real elements of media or news literacy teaching that occur did so when the few fact-checking organisations come in to a handful of schools as outside speakers.

6.1.4.3. No teaching of misinformation literacy taught or planned

At the time of writing, no elements of misinformation literacy were identified in the curricula taught in junior or secondary schools, and none were reported as planned.

6.1.5. SENEGAL

6.1.5.1. Structure of the school system and curriculum

In Senegal, the education ministry, the *ministère de l'éducation nationale*, sets education policy and has oversight of standards. Responsibility for running schools lies with local authorities. The curriculum, known as the *Programme Décennal de l'Education et de la Formation*, is set by the ministry. Children start their primary schooling between 5 and 7 years and education remains compulsory, by law at least, until the age of 16. According to Our World in Data, however, children are estimated to spend in practice an average of just 3 years in school (see Section 7.2 for details). More than 80% of primary students attend state-funded schools.

6.1.5.2. Media reports, online content as source for discussions

In 2018, President Macky Sall demanded that the education ministry develop a media literacy strategy in schools to 'counter "fake news" and other false information' (Cissé, 2018). As of June 2020, however, this and other such calls have had no noticeable effect on the curriculum, what is taught in schools or the time pupils spend in education.

Under the current curriculum as of June 2020, teaching of any elements of media literacy remained extremely limited. One of the few areas where media entered the schoolroom was the use of either traditional news articles or online resources such as Wikipedia and Google Earth as source materials for discussion. In secondary schools, the French language course examines the visual styles of different forms of media – colour, use of movement and light – but questions of news content and the practices of traditional and online news media were not covered.

6.1.5.3. No elements of misinformation literacy are taught or planned

As at mid-2020, no elements at all of misinformation literacy were included in the curricula for state schools in Senegal and none were reported as planned.

6.1.6. SOUTH AFRICA

6.1.6.1. Structure of the school system and curriculum

In South Africa, the national Department of Basic Education (DBE) sets policy and provides oversight for the school system while nine provincial education departments are mainly responsible for policy implementation. Schools can be broadly categorised into fully or partly state-funded public schools and independent, or private, schools. There continue to be significant resource gaps between schools. Children start their schooling in Grade R, and school is compulsory, by law, from Grade 1 to Grade 9, or the age of 15. Learners can opt to continue until Grade 12. According to Our World in Data, South Africans on average spend 10.1 years in school (see Section 7.2). The core curriculum used in public schools is set by the DBE and called the National Curriculum Statements. It includes Curriculum and Assessment Policy Statements (CAPS) for each of the four schooling phases. According to the Independent Schools Association of Southern Africa only 190,000 children are learners in their member schools. The government curriculum is used in schools reaching about 12 million children. We therefore analysed it for this report.

6.1.6.2. Wide range of broad media literacy concepts from media formats, to biases of historical sources, self-esteem and identifying bullying

The national curriculum features a wide range of concepts integral to broad media literacy from knowledge of mass media formats and concepts such as media freedom and bias in historical sources to issues such as self-esteem and identifying bullying. Through the course of a student's time at school, the curriculum (i) creates awareness of mass media formats including news reports, cartoons and photographs, and the ability of these formats to persuade, stereotype and mislead is outlined in the guidelines to teachers, (ii) sets out ways to examine the

accuracy or biases of historical sources, (iii) covers the social effects of technology, (iv) introduces students to topics such as responsible citizenship, self-esteem and bullying and (v) highlights the importance of critical thinking and the ability to analyse and critically evaluate information and communicate effectively (for all curriculum references see DBE, 2020).

In the foundation phase, when children are generally in the age group of 6 to 9 years, the learners use mass media resources – newspapers, magazines and advertisements – in activities and assessments and engage with the concept of 'news' by expressing their reaction to news texts verbally through speeches, role play as news readers and asking 'higher-order questions' about content and writing book reviews. In the intermediate phase, typically ages 10 to 12, the concepts of bullying, stereotyping and bias, but not media bias, are covered. In history, the course covers deciding 'whether information can be trusted', with skills outlined as 'Being able to investigate where the information came from: who wrote or created the information and why did they do it? It also involves checking to see if the information is accurate – comparing where the information came from with other information.' While this clearly links to skills and practices required to identify misinformation, it is focused on sources from history and does not specifically address current day concerns. In the senior phase, typically ages 13 to 15, the curriculum covers aspects of visual literacy and activities include 'listening for critical analysis and evaluation' and learning to distinguish between 'fact and opinion'. The ability to distinguish what is a claim and what is an opinion is a core skill in identifying false information. In the further education phase, when learners are typically aged 16 to 18, the curriculum states that: 'Information literacy is a vital skill' but provides no explanation of what information literacy entails. In one subject area the teaching plan includes the role of the media in a democratic society including freedom of expression, how media reflect a democratic society and the critical analysis of media campaigns. The Information Technology (IT) assessment topic focuses on safe Internet use including hoaxes. Misinformation specifically is not covered.

6.1.6.3. One province launched a module featuring misinformation literacy

Nothing in the national curriculum, save for the attention paid to online hoaxes in the IT assessment topic, focuses specifically on the challenge of misinformation for society today. To fill this gap for their learners, education officials in Western Cape, one of South Africa's nine provinces, launched in 2020 a new 'online safety' programme for Grades 8 to 12, typically ages 14 to 18, with a focus on false information. The programme was developed in a partnership between educators, experts in online safety from Google South Africa, learners, teachers and school heads. In Grade 8, a total of 240 minutes of class time are allocated to being safe online, aimed at establishing a mindset of 'click restraint' – established partly through knowledge of the harm that misinformation can cause. In Grade 9, a further 240

minutes of classroom time are devoted to promoting 'an awareness that not everything online is accurate and correct. Students are taught the markers to identify websites full of misinformation and 'fake' websites. Activities include comparing websites and online adverts, explaining what makes them trustworthy or not, and 'what may go wrong' when relying on unreliable websites, to again affect learners' attitudes to and perceptions of social norms around information sharing. In Grade 10, the potential social and political impact of online misinformation is addressed, along with guidelines to help 'distinguish the genuine from the misinformation' and evaluate the credibility of websites. In Grade 11, more time is devoted to the social and political effects of social media, and how social media becomes a tool for political influence.

The goal of the programme, designed to slot into the existing nationally prescribed curriculum, is to benefit not only learners, by making them more aware of the nature and dangers of false information online, but also their parents, teachers and government officials, Ismail Teladia, senior curriculum planner for Life Orientation at the Western Cape Education Department, said in an interview for this report[17]. Whether it does so effectively has not yet been tested. It is worth noting the course focuses strictly on online misinformation though many studies of misinformation show that false information also spreads through traditional media, in official statements and via off-line community networks too (Benkler et al, 2020; Cunliffe-Jones, 2022b; Newman et al, 2020). The course also appears to leave out other important elements of misinformation literacy identified in this report. Nevertheless, it brings a focus to misinformation in the way no previous curricula had done.

6.1.7. UGANDA

6.1.7.1. Structure of the school system and curriculum

In Uganda, the Ministry of Education sets education policy and has responsibility for the services provided. Responsibility for developing the curricula lies with the National Curriculum Development Centre. Children start their schooling between 3 and 5 years of age. According to Our World in Data, children on average are estimated to spend an average of 6.1 years in schooling (see Section 7.2 for details). The great majority of students attend state-funded public schools.

6.1.7.2. Limited teaching of news terminology, types and search

The state school curriculum, updated in 2019, features only limited teaching of broad media literacy concepts at the primary or secondary levels. At the lower primary level, 8-year-olds have one lesson on what makes news in their

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17   Interview with Ismail Teladia. 18 May 2020.

community while, from ages 10 to 12, learners are introduced to the terminology of traditional and online news media. Secondary school students have a topic called 'finding information', teaching the skills of online search techniques. Another topic called 'the media' teaches them to identify different types of news item, explore the issue of biases and how to write different types of article. The curriculum envisages outcomes in line with certain aspects of broad media literacy, specifically aiming to ensure learners will be creative and innovative in their approach to learning, and life, able to communicate using a range of media, sort and analyse information, cooperate with others and work independently. How these outcomes are achieved is unclear and there is no focus on identifying false information.

6.1.7.3. No elements of misinformation literacy taught or planned

As of June 2020, no elements of misinformation literacy were identified in the curriculum we reviewed, and none were reported to be planned.

7. OBSTACLES TO TEACHING MISINFORMATION LITERACY IN SCHOOLS

Although schools in many countries around the world provide substantial elements of broad media literacy, this is not the case in the sub-Saharan countries we studied. Meanwhile the teaching of misinformation literacy – the detailed knowledge and skills required to identify false information as such – is virtually inexistent. From evidence set out below, it appears the reasons for both failings start with a lack of consensus, among politicians, educationalists and others on the need for either media or misinformation literacy and what constitutes a suitable syllabus. Across the seven countries we studied, we noted a range of practical obstacles, ranging from the lack of political will to bureaucratic resistance, the limited number of years spent in school and poor teaching performance. As noted in a report on media literacy in five Asian countries, it is often also 'not easy for teachers … to discuss how to critically evaluate information and media content' for political and cultural reasons (Kajimoto et al, 2020). Reasons we identified for the failure to promote misinformation literacy, in particular, in the seven countries we studied included the following.

7.1. *Bureaucratic challenges and a lack of political will*

The most profound obstacles to the introduction of either media or misinformation literacy are (i) bureaucratic challenges within the education sector and (ii) a lack of political will to combat the problem of misinformation through teaching misinformation literacy.

In 2018, President Macky Sall of Senegal called publicly for the country's education ministry to 'develop a media literacy strategy in schools to "counter 'fake news'" and other false information' (Cissé, 2018). However, according to Professor Amadou Camara, coordinator of a project promoting curriculum reform in Senegal, the *Projet d'Appui au Renouveau du Curriculum*, there has been little discussion since in the education ministry, in schools or teacher training centres of how media or misinformation literacy might be introduced as a subject. The most significant factors are the lack of political support and the cross-disciplinary nature of the subject, he suggested. 'The main reason media literacy is not included at present is that it is not the responsibility of any existing discipline… the approach has to be interdisciplinary,' he said[18]. Momar Talla Beye, inspector of elementary school teaching in Senegal, added that while media literacy was declared a national priority in 2018: 'On the practical level we have run into difficulties. The need for

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18   Interview with authors May 2020.

media literacy is not accepted on the ground, teachers are more concerned by assessments, and we lack the specialists to teach the subject'[19].

In Nigeria, Information Minister Lai Mohammed in 2018 declared that 'each and every Nigerian has a role to play in curtailing the spread of "fake news"', urging citizens to learn to distinguish true from false information and avoid spreading misinformation (Okakwu, 2018). However, neither media nor misinformation literacy feature in the national curriculum and, besides the challenge of persuading and training teachers, media literacy advocates cite a lack of funding for media literacy materials in schools and libraries, part of a wider problem of under-funding of the whole state-run education sector: a sign of a lack of political will.

Schools in South Africa, like those in the United States and some European countries, have found time in the curriculum for both media literacy and misinformation literacy. However, Grace Baguma, Director of the National Curriculum Development Centre in Uganda, said for this report that media literacy is not part of the curriculum because of a lack of time for the topic. 'At the primary and secondary level, the focus is on getting the learners literate in numeracy, literacy, science mainly, and these areas take up the bigger part of the programmes of study. The biggest challenge would be to have it as a standalone subject at a time when we still have many subjects on the curriculum', she said. Despite the fact that the government in Uganda joined with others in East Africa in 2018 declaring their alarm at the rise of hate speech and the so-called 'fake news' (Olewe, 2018), Baguma said there were no plans to introduce the subject in the curriculum because it was not a matter of concern. 'There are no plans yet because there has not been any public concern on the need to have it as an area of study at this level', she said[20].

7.2.   *Limited time spent in school, poor teaching performance*

As of June 2020, the seven countries studied had a combined population of almost 440 million, of whom Nigerians accounted for just under half. The population of these seven countries is overwhelmingly young. The median percentage of the population that is of school age or younger is around 40%; lowest in South Africa, at 27.9% and highest in Uganda at 48.2%. This large youth population represents, of course, both an opportunity and a challenge for tackling misinformation through school. If such a large, young population can be taught to identify false and dismiss false information, they have the potential to reduce the misinformation effects more quickly than in countries with a smaller school-age population. However, to do so would require, among other factors, both good school attendance and

19   Interview with Momar Talla Beye May 2020.

20   Interview with Grace Baguma June 2020.

effective teaching, and performance across the seven countries is often poor on both counts.

First, low school participation numbers and early dropouts mean the average number of years that children spend in school is often lower than required by law. According to data specialists *Our World in Data*, figures from the most recent year available, 2017, show that, not including years spent repeating grades, young adults in Cote d'Ivoire had spent on average 5.2 years in primary and secondary school before leaving school for good. In Ghana, the total was 7.1 years; in Kenya, 6.5 years; in Nigeria, 6.2 years; in Senegal, just 3 years; in South Africa, 10.1 years and in Uganda, 6.1 years. This compares with an average of 7.8 years in Brazil, 12.4 in Finland, 12.8 in Japan and 14.1 in Germany (Roser & Ortiz-Ospina, 2016)[21].

Averages such as these of course mask differences and if a subject is included in a curriculum, it will be taught to some learners. However, the time allocated and spent are not the only important performance measures. South Africa ensures its students spend longer in school than any other country in our study. But two reviews of the country's education system in 2018 and 2019 found outcomes harmed by poor teaching performance. This was identified as caused by a lack of teaching expertise, in one study (Mlachila & Moeletsi, 2019), and widespread teacher absenteeism, in the other (Mashaba & Maile, 2018). This is despite the fact that funding of South Africa's school system is comparable with that of other countries of the Organization for Economic Co-operation and Development (OCED), a group of some of the world's wealthiest states. Underfunding, poor teacher training and poor resources in schools are reported widely, meanwhile across the region[22]. As indicated earlier regarding media literacy teaching in Asia, it is often also not easy for teachers in many contexts, 'to discuss how to critically evaluate information and media content' for political and cultural reasons (Kajimoto et al, 2020).

7.3.   *Low literacy, numeracy rates complicate the challenge*

In order to understand what makes misinformation in circulation false or misleading, it is often necessary to understand the limitations and different possible meanings of words used and/or basic numerical and statistical concepts such as percentages and rates. Basic literacy and numeracy skills are recognised by fact-checking organisations across Africa as essential to the ability to identify false information as such (Cunliffe-Jones, 2022a). In 2013, UNESCO noted that

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21   Data retrieved from Our World In Data October 2020. https://ourworldindata.org/global -education.

22   See for example https://wenr.wes.org/2017/03/education-in-nigeria.

significant challenges remain to the spread of media literacy, 'despite the fact that access to information and knowledge has increased during the last decade due to the higher levels of basic literacy in many countries around the world' (UNESCO 2013). However, literacy and numeracy rates remain low in many countries across the sub-Saharan region which have not seen the changes identified by UNESCO. Low rates of general literacy, defined as the percentage of the population who can read and write with understanding, are one of the results of the poor performance of the education system. As of mid-2020, the literacy rate in Cote d'Ivoire was below 50%, and numeracy lower still. In South Africa, a 2012 study by the University of Stellenbosch found that while 71% of children in Grade 6 were functionally literate, only 58.6% could be considered functionally numerate (Wilkinson, 2014).

If or when media literacy, or misinformation literacy, are introduced into the curricula of schools across the continent, low school attendance, poor teaching performance and low rates of basic literacy and numeracy will still remain. This will make the objective of misinformation literacy harder to achieve.

8. EVIDENCE OF MEDIA AND MISINFORMATION LITERACY EFFECTS ON 'REALISM'

The argument made by Grace Baguma, Director of the National Curriculum Development Centre in Uganda, that the focus in primary and secondary schools is and should be on 'getting the learners literate in numeracy, literacy, science' is a powerful one. This appears particularly the case when actual time spent in school is limited and performance outcomes are often below those required. The only justification for taking time from other subjects in the curriculum, for misinformation literacy, would be if (i) the harms caused or risked by misinformation are seen as major problems for individuals and society; (ii) if teaching the subject can be shown to have positive effects, either on reducing risk of misinformation harm, advancing skills in other fields or both. As we set out below, better research is needed into the effects of both broad media literacy and elements of our proposed misinformation literacy on skills and behaviours. However, our review of available research suggests the introduction of misinformation literacy would be justified on this basis.

8.1. African governments and public recognise harm misinformation causes

As this report has set out, the actual and potential harms caused to society by false information are real and serious. They range from vigilante violence (Nur, 2019) to medical harms through to the use of the wrong medical treatments (Busari & Adebayo, 2020; Faive Le-Cadre, 2019), or the spreading of vaccine resistance (Larson, 2018). They extend to the entrenching of dangerous stereotypes about communities (Tijani, 2019) and the distortion of election processes (Adzongo, 2019). The threats posed by misinformation been recognised both by political leaders from Kenya, Tanzania and Uganda (Olewe, 2018) to Nigeria (Okakwu, 2018) and Senegal (Cissé, 2018), and by the public across the continent (Conroy-Krutz & Appiah-Nyamekye Sanny, 2020; Wasserman & Madrid-Morales, 2018).

Declared concern about the possible effects of misinformation led governments in 11 sub-Saharan countries to nearly double the number of laws and regulations related to false information between 2016 and 2020 (Cunliffe-Jones et al, 2021). Penalties of up to 7 years in jail were introduced for publishing information the authorities declared false. In 10 of 31 laws or regulations reviewed, no evidence of harm caused was required for publication to be penalised (Cunliffe-Jones et al, 2021). This vigorous punitive approach contrasts sharply with the lack of alternative government responses to misinformation, including through education.

8.2.   *In a complex field, meta-review suggests 'positive effects' on 'realism'*

A 2012 meta-analytic review of the effects of 51 broad media literacy interventions carried out in countries from the United States and Australia to Tanzania found overall 'positive effects' resulted from the initiatives. Taken as a whole: 'Media literacy interventions had positive effects on outcomes including media knowledge, criticism, perceived realism, influence, behavioural beliefs, attitudes, self-efficacy and behaviour', the study found (Jeong et al, 2012).

Although this finding is encouraging to advocates of media literacy, it needs to be considered with a degree of caution. In 2019, researcher Alice Huguet and colleagues noted that many of the ways of measuring the effects of media literacy programmes do not capture their effects fully and are difficult to compare (Huguet et al, 2019). A review published the same year by US media literacy scholar James Potter, examining the assessment methods used in 88 media literacy studies, concluded: 'The assessment of validity found that none of the studies presented a test of media literacy that completely captured the elements in their definitions of media literacy, so the content validity of this literature was judged as poor' (Potter & Thai, 2019). In an email to the authors, Hong Kong media literacy scholar Masato Kajimoto agreed, arguing many studies, some longitudinal, do show positive effects but their systems of evaluation or assessment often appear arbitrary, and with no control group used[23].

As noted earlier in the report, one of the challenges for scholars seeking to assess the effects of any media literacy programmes is a lack of widespread agreement on definitions both of media literacy and of the intended outcomes and ways to measure them.

8.3.   *Focus on specific knowledge, skills appears to increase efficacy*

General awareness of the existence of false information does not of itself ensure that individuals can identify false statements correctly (National Literacy Trust, 2018). Nor does being taught broad media literacy. Perhaps unsurprisingly, the meta-analytic review of 51 studies of media literacy conducted by Se-Hoon Jeong et al found that the narrower the focus of the courses taught, and the more teaching time allocated, the more effective they were. 'Moderator analyses indicated that interventions with more sessions were more effective, but those with more components were less effective' the study found (Jeong et al, 2012).

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23   Email to authors October 2020.

8.4.   Evidence of the effects of elements we identify as promoting misinformation literacy

Misinformation literacy is still a relatively new and rarely taught topic in schools around the world and there is not yet a large body of research examining the effects of teaching one or more of the six main themes we propose on individuals' ability to identify false information and propensity to dismiss. While the Open Society Institute's 2019 Media Literacy Index rated Finland – the country that has perhaps gone the furthest in promoting teaching of misinformation literacy – as the country most prepared to deal with the impacts of disinformation (OSIS, 2019), the evidence for the claim appears slight and there was no clear proof of cause.

Nevertheless, a growing body of studies published in recent years provide preliminary indication that teaching of specific misinformation themes may increase individuals' ability to identify misinformation. This includes evidence, referred to earlier, from social psychologist Sander Van der Linden and colleagues that providing individuals with forewarning of misinformation they can expect to see, both in terms of context and content, reduces their susceptibility to false claims (Van der Linden et al, 2020). We also know, from an examination of the types of misinformation in circulation, that a common feature of misinformation is that the information may have been created by someone other than its purported creator; hence, skills are required to identify the real originator, and we know that understanding who created a claim affects how credible the claim is seen to be (Vicol, 2020). The work of Amazeen and Bucy shows that teaching 'working knowledge of how the news media operate aids in the identification and effects of fabricated news' (Amazeen & Bucy, 2019). This indicates that teaching the processes by which accurate and inaccurate information circulate, in traditional media, online and in offline community networks, may have similar effect.

The forthcoming study of misinformation in Africa that is part of this series identifies evidence that, while many individuals know information is false and still share it, understanding the harms false information may cause does affect audience responses (Cunliffe-Jones, 2022b). Furthermore, the forthcoming study of the working practices of fact-checking organisations provides empirical evidence of training practices identified as necessary to develop the skills of identifying accurate and inaccurate information (Cunliffe-Jones, 2022a).

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It is important to note, of course, that not all media or misinformation literacy teaching programmes do have clear positive effects either on knowledge and skills, and the ability to identify false information, or behaviour of doing so and dismissing

false information as such. The indications of effects, or possible effects, offered by the sources cited above can only be considered preliminary evidence at this stage. Most assessments of the effects of teaching either media literacy or specific misinformation literacy have not included before and after testing of the sorts of knowledge and skills that we identified in Sections 3 and 4 as necessary to identify false information and promote misinformation literate behaviour. Many assessments have not included control groups. To assess the effects of such programmes, and of particular elements taught within such programmes, much further research is needed.

9. CONCLUSIONS AND RECOMMENDATIONS

In the past few years alone, false and misleading information spread online, via traditional media and through offline community networks has caused harm to individuals and society across Africa. This has ranged from vigilante violence and incidents of civil unrest (Adegoke, 2018; Nur, 2019), to preventable deaths through the use of the wrong medical treatments (Busari & Adebayo, 2020; Faive Le-Cadre, 2019). 'In a multi-ethnic and multi-religious country like ours, fake news is a time bomb', Nigerian Information Minister Lai Mohammed said in July 2018. 'But for the prudence and vigilance of Nigerians, they – the religious and ethnic bigots among us – would have set the nation on fire,' he went on. Citizens have a responsibility, the minister said. 'Each and every Nigerian has a role to play in curtailing the spread of fake news' (Okakwu, 2018). The same year, Senegal's President Macky Sall called on the country's education ministry to develop a media literacy strategy to 'counter "fake news" and other false information' (Cissé, 2018).

Although much of the harm that misinformation causes may indeed come through influencing the beliefs and actions of the public, it can at times have greater effect by influencing the beliefs and actions of politicians and officials directly. The ban on polio vaccination in several northern Nigerian states from 2002 to 2006 and the HIV treatment policy enacted under President Thabo Mbeki a few years earlier resulted from false information and came at a staggering social cost (Boseley, 2008; Jegede, 2007). Teaching media or misinformation literacy in schools would not have prevented or mitigated bad decision-making in government. Other instruments are at times required. Yet, misinformation literacy still has a critical role.

The two key questions this report has sought to answer are (i) whether elements of media literacy that address the issue of misinformation were included in, or planned for, the curricula taught in state schools in seven sub-Saharan African countries as of June 2020 and (ii) whether teaching young people elements of media or news literacy relevant to the issue of misinformation reduces their susceptibility to believe and share false information, and if so what actions are needed. The report has done this by setting out (i) clear definitions drawn from past and recent scholarship of 'broad media literacy' and 'news literacy', and our own proposed definition of 'misinformation literacy', (ii) the six fields of knowledge and skills that the research we have reviewed suggests are essential to the development of misinformation literacy, (iii) evidence of the teaching of these different topics and (iv) evidence of the effects of the teaching of these fields of knowledge and skill.

9.1.   Conclusions

9.1.1.   BROAD MEDIA LITERACY IS NOT A 'FAKE NEWS' ANTIDOTE. MISINFORMATION LITERACY REQUIRES SPECIFIC KNOWLEDGE AND SKILLS

The first challenge, answering these questions, has been to compare the knowledge and skills that make up broad media literacy with those our research suggests are necessary to be able to identify misinformation. As we set out, MIL, or broad media literacy, encompasses a wide range of themes from knowledge of traditional news production processes and concepts of bias and influence, to understanding of what constitutes informed citizenship and social advocacy, self-esteem and cyber-bullying and consumer competence. These latter themes are rightly seen widely as important. But, as Keener and West note 'the many different concepts in media literacy education have not addressed many students' inability to reason effectively with information online' (Keener & West, 2021). Indeed, based on the evidence set out in Section 3 and Section 5, we argue that many of the traditional themes of broad media literacy bear little correlation to the antidote needed to misinformation.

Building on the five domains of news literacy identified by Vraga et al (2020), and adapting them to specifics of misinformation, we argue misinformation literacy be defined as: 'Knowledge of the forms that misinformation and accurate information take, the processes by which they are produced or emerge, are distributed and consumed, by whom, where, and on what topics, and the skills to distinguish the one from the other.' And that it requires the teaching of knowledge and skills in the following six domains:

i.   **Context**: knowledge of the contexts – social, cultural, economic, political, informational and events – in which false and accurate information are produced

ii.   **Creation**: knowledge of the types of people and institutions found to create false and accurate information, their different motivations and the skills to identify those who produce specific information online

iii.   **Content**: knowledge of the difference between facts and opinions, the different ways information can mislead and the skills and practices to distinguish accurate and inaccurate information

iv.   **Circulation**: knowledge of the processes by which accurate and inaccurate information circulate and what drives people to share information

v.   **Consumption**: knowledge of the reasons we as individuals may believe false or misleading information to be true

vi.   **Consequences**: knowledge of the different forms of actual and potential harm caused by believing and sharing false and misleading information

9.1.2. MEDIA LITERACY BARELY TAUGHT IN SEVEN SUB-SAHARAN COUNTRIES, ELEMENTS OF MISINFORMATION LITERACY IN JUST ONE PROVINCE

Despite the strong concerns expressed by governments across the region, the curricula taught in state schools in six of the seven countries that we studied – Cote d'Ivoire, Ghana, Kenya, Nigeria, Senegal and Uganda – included only limited elements of broad media literacy in their teaching plans. Although three countries – Cote d'Ivoire, Kenya and Nigeria – had recently updated their curricula, they did not include substantial elements of media literacy. Kenya's new curriculum contains the most of the six, with elements of digital literacy and critical thinking. Those in Cote d'Ivoire, Ghana and Senegal pay almost no attention to the subject.

The curriculum provided to learners in South Africa shows the most attention to broad media literacy themes, including some focus on questions of the accuracy and biases of historical sources. In January 2020, a new module was introduced to the curriculum taught in the country's Western Cape province, adding elements more directly related to identifying misinformation today. (See details for all countries set out in Section 7).

9.1.3. MANY OBSTACLES BLOCK MISINFORMATION LITERACY, STARTING WITH POLITICAL WILL

Across the seven countries we studied, we noted a range of obstacles blocking the entry of misinformation literacy teaching to schools. Bureaucratic challenges starting from a lack of political will are the most substantial. Despite statements of concern about the risks posed by misinformation, there has been little discussion in the education ministry, schools or teacher training centres in Senegal of media or misinformation literacy, according to Professor Amadou Camara, coordinator of a project promoting curriculum reform[24]. In Uganda, there are no plans to introduce the subject 'because there has not been any public concern on the need to have it as an area of study', Grace Baguma, responsible for curriculum

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24   Interview with authors May 2020.

planning in Uganda, said[25]. A perception that curricula are already crowded is a hurdle in many countries. And lastly, if the subject is introduced to the curriculum, the low level of school attendance and poor teaching performance in many countries would make it difficult to achieve declared objectives.

9.1.4. PRELIMINARY RESEARCH SUGGESTS WELL-TARGETED TEACHING COULD CURB HARM

Misinformation literacy is still a relatively new topic, taught in schools in Norway and Finland but not widely around the world. Unsurprisingly, there is not yet a large body of substantive research examining the effects of teaching the subject, or what propose as one or more of the subject's six main themes.

Nevertheless, studies identified in Sections 5 and 7 of this report, ranging from social psychology to empirical studies of the working practices of fact-checkers, appear to indicate that teaching of themes we identify as misinformation literacy does increase individuals' ability to identify misinformation as such. And the forthcoming study of misinformation in Africa that is part of this series suggests that, while some know information is false and still share it, understanding the harms of false information may affect audience responses (Cunliffe-Jones, 2022b). Further research is, of course, needed, assessing both before and after knowledge and skills, and where possible effects on behaviour.

9.2.   Recommendations

For governments, public figures and institutions, education and curriculum authorities, media leaders, fact-checkers, library associations and others concerned by misinformation and researchers of education and misinformation, we make the following recommendations.

9.2.1. GOVERNMENTS, PUBLIC FIGURES AND INSTITUTIONS

  i.   Those who wish to reduce the harm caused by misinformation, must set social norms (Ajzen, 1991) of neither originating nor spreading false information.

 ii.   Those who wish to reduce the harm caused by misinformation must fund public education, and provide high-quality teacher recruitment and training, making media literacy and misinformation literacy part of the teacher training curriculum.

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25   Interview with authors June 2020.

9.2.2. EDUCATION AND CURRICULUM AUTHORITIES

i.   Introduce misinformation literacy themes into primary and secondary school curricula featuring these six domains of misinformation knowledge and skills: its context, patterns of creation, content, circulation, consumption and consequences

ii. Liaise with subject experts ranging from educationalists around the world to non-partisan fact-checking initiatives and misinformation researchers to ensure the new curriculum theme remains up to date

iii. Introduce assessment of misinformation literacy at key stages through the student's progress with benchmarks of misinformation literacy knowledge and skills for different ages

9.2.3. MEDIA LEADERS, FACT-CHECKERS, MEDIA LITERACY AND LIBRARY ASSOCIATIONS

i.   Provide greater transparency about the processes by which you verify the accuracy of information you publish or broadcast and admit any mistakes you make openly and honestly

ii. Work with educational authorities to identify the knowledge and skills, particular to each country, required by students to reach media literacy

9.2.4. SOCIAL MEDIA, MESSAGING AND SEARCH PLATFORMS

Develop and strengthen misinformation literacy messaging on your platforms, using the six fields to enable and encourage users to carefully consider the accuracy of information, its source of origin and its potential effects before it is shared

Provide funding support for independent media, fact-checking organisations, media literacy centres and library associations that can provide essential support to the work of educational authorities on misinformation literacy

9.2.5. RESEARCHERS INTO EDUCATION AND MISINFORMATION

Review and tests the definitions and arguments of effects proposed in this report

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APPENDIX 1 – METHODOLOGY AND DEFINITIONS OF KEY TERMS

1.1. Key premises of the research approach

A lack of definitional clarity about what the terms 'media literacy' or 'news literacy' mean makes the task for scholars of identifying school programmes that include elements of 'media literacy' or 'news literacy' relevant to identifying false information a challenging one. In this report, we start from the premise that we need to set out evidence for the different definitions used, starting with the nature of misinformation, since to assess how well any form of media literacy addresses the field, we need to understand what misinformation is. In this regard, in Section 3 of the report, we outline the types of misinformation in circulation, who creates and spreads it, the context in which it emerges, where it circulates, why people believe it to be true and the harmful effects certain types of misinformation may have.

We then review the different elements of media literacy proposed by educators in different countries and contexts. As we have noted, the terms 'media literacy' and 'media and information literacy (MIL)' are understood and applied in a patchwork of approaches across the world, seeking a variety of outcomes. UNESCO, the foremost proponent of MIL education, defines the field as 'a set of competencies that empowers citizens to access, retrieve, understand, evaluate and use, create, as well as share information and media content in all formats, using various tools, in a critical, ethical and effective way, to participate and engage in personal, professional and societal activities' (UNESCO, 2013). On the basis of the studies and theory we cite below, we propose a new term of our own, 'misinformation literacy', as a specific sub-type of news literacy, comprising knowledge and skills that fall into six domains relating to the types and patterns of misinformation found circulating on the continent, who and what drives it and its effects. We set out our supporting evidence for this proposal in Section 5 of the report. We then review the curricula most widely studied in state schools in seven countries – Cote d'Ivoire, Ghana, Kenya, Nigeria, Senegal, South Africa and Uganda – to identify whether any elements of media or news literacy are included, at least in theory, in the teaching programmes offered by these schools, and whether this includes those elements of knowledge and skill we define as misinformation literacy. By this approach, we seek to answer the report's two key research questions of the use and effectiveness of media or news literacy in schools in reducing harm done by misinformation.

1.2.   Definitions of key terms used in the report

For this report, we use the following definitions for key aspects of information literacy[27]:

1.2.1   **'Broad media literacy'** or **'media and information literacy'** are used in this report to describe the widest conceptualisation of the field, agreed in 1982 by the UN agency UNESCO. This defined media literacy as 'developing the knowledge, skills and attitudes which will encourage the growth of critical awareness and, consequently, of greater competence among the users of electronic and print media' (UNESCO, 1982). In addition to media, this term is understood to cover themes such as 'informed citizenship, aesthetic appreciation and expression, social advocacy, self-esteem, and consumer competence', according to one study (Aufderheide, 1993) and 'digital citizenship, digital literacy, informational literacy, media arts', according to another (Keener & West, 2021). In 2013, UNESCO defined MIL as 'a set of competencies that empowers citizens to access, retrieve, understand, evaluate and use, create, as well as share information and media content in all formats, using various tools, in a critical, ethical and effective way, to participate and engage in personal, professional and societal activities' (UNESCO, 2013, p. 29).

1.2.2   **'Media literacy'** is used in this report to refer to the more narrowly focused ability of a citizen to 'decode, evaluate, analyse and produce both print and electronic media' (Aufderheide, 1993). This definition is used among media literacy advocates today as distinct from broader MIL.

1.2.3   **'News literacy'** has traditionally been identified as a sub-type of media literacy, focused specifically on news information. For this report, we use the definition of news literacy proposed in 2020 by Emily Vraga and colleagues as 'knowledge of the personal and social processes by which news is produced, distributed and consumed, and skills that allow users some control over these processes' (Vraga et al, 2020).

1.2.4   **'Misinformation literacy'** is a term we propose, building on the above definition of news literacy, to refer to the 'knowledge of the forms that misinformation and accurate information take, the processes by which they are produced or emerge, are distributed and consumed, by whom, where and on what topics and the skills to distinguish the one from the other'.

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27   We acknowledge there are many forms of literacy beyond those we describe here, from written literacy to digital literacy to health literacy and more. We do not provide definitions for those that fall outside the scope of the report.

See Section 4 for a breakdown of the six domains of knowledge and skills this comprises.

1.2.5   **'Misinformation literacy behaviour'** is the term we propose to describe 'the behaviours and practices that occur when people engage with news and information content and identify and dismiss false information on grounds of falsity'. See Section 4 for the basis of this definition.

1.2.6   **'Claim'** is a term we use to refer to 'any factual assertion made by a person or organisation, explicitly or on occasion implicitly, whether made by the spoken or written word or through presentation of an image'. This definition is drawn from the definition used in the guidelines for signatories of the International Fact-Checking Network, the global umbrella body for fact-checking[28].

1.2.7   **'Fact-checking'** is used to refer to 'publishing or broadcasting content that assesses the factual accuracy of factual statements made by public figures and prominent institutions and/or claims widely circulated online in text, visual and other formats'. This is also drawn from the International Fact-Checking Network (IFCN) guidelines noted above.

1.2.8   **'Information disorder'** is a term subject to different definitions. We use it in this report to refer to three broad factors that, together with how people think, combine to undermine public understanding: (i) misinformation, (ii) the distorted focus of information and (iii) the denial of access to accurate information. See Section 2 for a fuller discussion.

1.2.9   **'Misinformation'** is used to refer to 'misleading or false information that is spread, regardless of intent to mislead'. Section 2 provides a more detailed discussion of what constitutes false information or misinformation.

1.2.10   **'Disinformation'** is used to refer to 'deliberately false, misleading or biased information, manipulated narrative or facts'. This definition is also used by multiple sources. See Section 2 for a more detailed description of this term.

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28   For disclosure, the lead researcher on this report is an independent member of the advisory board of the IFCN and oversaw the 2020 review of its 'Code of Principles' for fact-checkers. https://ifcncodeofprinciples.poynter.org/know-more/the-commitments-of-the-code-of -principles

1.2.11 **'Fake news'** is used only in quotations. Taken literally, the term applies purely to false or fabricated information produced in a news format to deceive about its origins and accuracy. In practice, the term has been used by headline writers, politicians and the public worldwide since 2016, often to dismiss information as false or biased, regardless. We consider that with such lack of definition 'fake news' is a misleading term best not used save in quotations.

1.2.12 **'Access to information'** and **'freedom of information'** are used to refer to both the rights, and the systems that enable citizens 'to seek, receive and impart information and ideas through any media and regardless of frontiers', set out as a right in Article 19 of the Universal Declaration of Human Rights. As our series of reports shows, lack of access to information remains one of the main drivers of misinformation on the continent.

1.2.13 '**Freedom of expression'** is used to refer to the right, set out in Article 19 of the Universal Declaration of Human Rights, to express information and ideas through diverse media. This is both a fundamental right for individuals and for a free media to hold governments and institutions to account.

1.2.14 **'Distorted focus of information'** is our own term, used to refer to the promotion and/or censorship of particular topics such that, while the information disseminated may not be inaccurate in itself, the focus on or absence of the topic distorts audience understanding. Details of the concept are set out in Section 2.

1.2.15 **'Denial of access to accurate information'** is used to refer not only to the denial of citizens' rights to access to information set out in Article 19 of the Universal Declaration of Human Rights but also the failure of authorities to ensure that public information provided is accurate and credible. Details of the concept are set out in Section 2.

1.2.16 **'Harmful effects' (actual or potential)**. We refer in this report to claims of harmful effects from false information. We differentiate between 'actual' harmful effects, that is, direct, observable harm to an individual or group that can be shown through empirical evidence to have been caused by false or misleading information, and 'potential' harmful effects, that is, harm that a combination of evidence and theory indicates may have or may in future likely be caused by false or misleading information. We set out this details and examples of effects in Section 2.

1.3.   The choice of countries studied in the report

The report explores the teaching of elements of media or misinformation literacy in seven countries of sub-Saharan Africa: Cote d'Ivoire, Ghana, Kenya, Nigeria, Senegal, South Africa and Uganda. We selected these countries as each being influential in their respective regions. Due to our own linguistic limitations, we do not cover North Africa in this report.

1.4.   The choice of studies of media literacy effects

To assess the potential effectiveness of media or misinformation literacy programmes in reducing susceptibility to misinformation, we have:

i.   Reviewed existing primary research and meta-analytic reviews of research from Africa and worldwide related to the effectiveness of media and news literacy programmes.

ii.   Reviewed existing primary research from Africa and around the world related to knowledge and skills used in the process of identifying false information.

iii.   Conducted qualitative interviews with named experts in the field.

iv.   Reviewed the findings of two separate studies that are part of this series, one examining the working practices of fact-checking organisations operating across Africa 2019 to 2020 and the other reviewing the types and drivers of false information on the continent.

1.5.   How we identified the teaching of elements of media and misinformation literacy in curricula

For each country studied, we reviewed the curriculum most widely used in primary and secondary schools for the terms 'MIL', 'news literacy', 'fake news' or 'misinformation, and French-language equivalents, as well as elements of the standard definitions of broad media literacy including references to 'access', 'accuracy', 'bias', 'media', 'mass media' and 'news'. Activities suggesting the development of critical thinking skills were also identified.

1.6.   The methodology for the studies of fact-checking and misinformation

To establish the applicability of our theory of misinformation literacy, we assessed the skills and knowledge identified in the forthcoming studies of fact-checking (Cunliffe-Jones, 2022a) and of types, drivers and effects of misinformation circulating in Africa (Cunliffe-Jones, 2022b) that are part of this series. Elements of the findings are set out in Section 2.

APPENDIX 2 – THE REPORT INTO TYPES, DRIVERS AND EFFECTS OF MISINFORMATION

The report into the types, drivers and effects of misinformation identified as circulating across the continent between July and December 2019 will be put forward for publication in 2022. It is part of the series of four reports into the types, drivers and effects of misinformation and three responses to the phenomenon. We set out here details of the methodology of the report.

The samples of misinformation studied

The key source for the report is a database of more than 1,200 examples of information circulating in sub-Saharan Africa in the second half of 2019 and identified as false or misleading by one of more of 14 named fact-checking organisations. This information is drawn from fact-checks published between 1 July and 31 December 2019 – a 'business as usual' period on the continent, falling in between 6 months during which the continent saw a series major elections, January to June 2019, and the global health crisis that started in 2020.

The sample was limited to fact-checks published or broadcast in English or French, for reasons of the author's linguistic limitations. Fact-checks of claims found to be accurate are not included as the focus of the report is on misinformation. The sample identified is subject to both the news selection biases of the fact-checking organisations and the still limited number and size of fact-checking organisations operating on the continent. These limitations and other questions concerning the sample studied are discussed in the report.

The accuracy of the assessments of the misinformation sample

For the study to be sound, the author reviewed the evidence on the basis of which the fact-checking organisations concluded that the information concerned was in some way either false or misleading, and also cross-checked the results of all those fact-checks where the same information was assessed by more than one fact-checking organisation. Before the report is published, the validity of these and the other findings on a randomised sample of the entries in the database will be independently reviewed by other, independent researchers.

PROCESS FOR CLASSIFYING TYPES, DRIVERS AND EFFECTS OF MISINFORMATION

To classify the types and drivers of misinformation examined in the database, the authors of this study assessed all entries using evidence drawn from the fact-checks

themselves, follow-up enquiries and relevant studies (see more below). This process is not simple, due to both the number of factors that may be involved and the levels of deception inherent in certain forms of misinformation. Nevertheless, the process seems straightforward compared to the more complicated and often uncertain process of assessing the effects misinformation does or may have.

To assess the possible effects of misinformation it is necessary to distinguish between actual, empirically provable effects of specific false or misleading claims, on the one hand, and the less certain, potential effects of claims and sets of claims over time and in different conditions on the other. It is also necessary to consider the effects of information on belief or understanding, and the effects of any changes in belief or understanding on actions and feelings. It is necessary to set out the different degrees of confidence with which such findings can be asserted. Finally, it is necessary to identify the different effects depending on the audience that see and believes the false information. The effect on society of false information when it changes the actions taken by a policy-maker, in a position to set rules for hundreds, thousands or millions of people, may be greater than when believed by an individual member of the public. And yet, widely spread false information may also affect the actions and feelings of millions of individuals too.

THE 25 FEATURES OF THE MISINFORMATION ASSESSED IN THE STUDY

To determine what can be said about factors that make the different types of false or misleading information in the sample (i) lead to actual, empirically provable harmful effects, with evidence drawn from the fact-checks or further investigation or (ii) potentially contribute to harmful effects, with evidence drawn from the fact-checks, further investigation and existing research, the author assessed all entries in the database according to 25 defined features. The study then reviews the correlation between harm and different combinations of features assessed to put forward a theory of factors that lead to greater or lesser risks of harmful effects, to whom, and how, and sets out the basis for this.

To do this the database sets out both metadata on every false claim (the source of the fact-check, the date published, a link to the source and a summary of the false claim), and classifies every claim entered according to the following 25 features.

The (i) claim checked; (ii) country or countries it concerned; (iii) country or countries in which it was observed; (iv) type of distortion of reality – unproven to false claims; (v) type of information – simple info to stimulation; (vi) topic of claim; (vii) whether claim spread on multiple sources or occasions; (viii) whether

claim forms part of a specific wider false narrative; (ix) degree of distortion of reality in false claim; (x) format/s in which claim spread; (xi) type of originator or promoter of the claim; (xii) type of channel/s by which claim spread; (xiii) factors that caused or may have caused claim to be created; (xiv) factors that may have facilitated spread of claim; (xv) potential durability of the false claim; (xvi) type of claim's possible effects on belief or understanding; (xvii) whether claim is 'actionable' in near term – if believed; (xviii) type of 'consequential effect' – if believed; (xix) degree of confidence claim caused actual harm; (xx) field and form of actual harm caused; (xxi) whether claim had the potential to cause harm; (xxii) field and form of harm claim had potential to cause; (xxiii) potential scale of harm – 1 to 1 to 1 to many; (xxiv) durability of harm; (xxv) whether responses to the claim may have mitigated harm.

THE EVIDENCE ON WHICH FALSE, MISLEADING CLAIMS ARE CLASSIFIED

The claims are classified on the basis of evidence drawn from the following three sources.

i. **Information contained within the fact-checks.** The author draws on evidence from the fact-checks they assessed. This includes data on the claim, evidence of effects and audience responses and the sources they quoted.

ii. **Follow-up interviews and empirical evidence.** Where the fact-checks do not provide enough information, the author carried out follow-up investigations including desk-based research and interviews.

iii. **Review of relevant studies.** Where useful, the author also assessed relevant studies and reviewed for evidence. As set out in the bibliography, the studies accessed provide evidence of and theories on: (i) the scale and nature of global misinformation; (ii) the scale and spread of misinformation in Africa; (iii) the originators and drivers of misinformation globally; (iv) factors facilitating belief and spread of misinformation; (v) the effect of misinformation on trust and of low trust on society; (vi) the role of misinformation fuelling, feeding off political radicalisation; (vii) the influence misinformation has on the outcome of elections; (viii) the role of misinformation inciting, or sustaining, violence and conflict; (ix) the influence of misinformation in shaping government policy; (x) the influence of vaccine misinformation on vaccination take-up; (xi) the influence of misinformation on public health in general.

CATEGORIES, CRITERIA AND SOURCES OF EVIDENCE USED

(i)   The claim checked

The term 'claim' is used to refer to 'any factual assertion made by a person or organisation, explicitly or on occasion implicitly, whether made by the spoken or written word or through presentation of an image'. This definition is drawn from the definition used in the guidelines for signatories of the International Fact-Checking Network, the global umbrella body for fact-checking. The description of each claim in the database is based on evidence in the fact-check.

(ii)   Country or countries the claim concerns

Where a claim relates to events alleged to have taken place in a particular country or countries, the effect of the claim on an audience may depend, in part, on the location of the claim and audience. Using evidence drawn from the published fact-check, the database records the country or countries the claim refers to, including the country of any known source of the claim.

(iii)   Country or countries in which claim observed

The database records the country or countries in which the claim was observed, based, again, on evidence from the published fact-check. The list of countries in which the claim was observed is not exhaustive. Few fact-checks record all countries in which a claim was observed.

(iv)   Type of distortion of reality

There is no evidence that the type of distortion made by the claim shapes its effect on its audiences. However, understanding the way it distorts reality enables audiences to better understand and accept the falsity of information that may contain an element of truth. Using information drawn from the published fact-check, the database classifies entries by the type of distortion shown in one of the following ways – claims that are

1. **Unproven** – *A factual claim for which no definitive proof is publicly available*

2. **Satire** – *A factual claim that originated as satire but is understood to be true*

3. **False** – *A factual claim that is wholly false*

4. **Mislabelled or misattributed** – *A factual claim, often an image or statement, that is labelled or attributed in ways that distort understanding*

5. *Misleading* – *A factual claim that bears some truth but lacks crucial context or detail and so distorts understanding*

6. **Overstated/understated** – *A factual claim that overstates or understates the level or scale of a position*

7. **Conflated** – *A factual claim that conflates issues or events in a way that distorts understanding*

8. **Fabricated or manipulated** – *Content, presented as real, all or part of which is fabricated or manipulated in ways that distort understanding*

9. **Imposter content** – *Content falsely presented as having been created by an individual or organisation*

10. **Coordinated inauthentic behaviour** – *Fake accounts and manipulation of social media to create a false or misleading understanding, particularly of public attitudes*

11. **Hoaxes and scams** – *A false factual claim intended to deceive – often to spread computer viruses, or other harms, to deceive for amusement, illicit reward or other effect*

(v)   Type of information

To assess whether the type of information influences its effect, the database categorises the claim according to the five information types identified by McQuail[29]. It does so based on content analysis of the claim in the published fact-check.

1. Simple information

2. Stimulation to action

3. Directing attention differentially

4. Persuasion

5. Defining situation/defining reality

(vi)   Topic of claim

Although much of the debate since 2016 about misinformation has focused on false claims related to politics, health and social divisions, the claims identified by fact-checkers as misinformation covered 20 broad topics. Many claims relate to more than one topic. As noted above, the list of topics identified is not exhaustive. It reflects both the selection biases of the fact-checking organisations whose work

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29   McQuail, D. (1983. Updated 2010). McQuail's Media and Mass Communication Theory. Sage Publications. Chapter 17.

is studied – selecting what they consider to be important or interesting to fact-check, not all forms of misinformation – and the limits on their staff and resources. The identification of topics is based on content analysis of the false information.

> **SUMMARY OF TOPICS:** *(i) Accidents, disasters and need; (ii) business and economy; (iii) celebrities and the famous; (iv) crime & justice; (v) education; (vi) environment and climate; (vii) financial & other opportunities; (viii) gender; (ix) governance; (x) health; (xi) international relations; (xii) job offers; (xiii) media; (xiv) migration and communities; (xv) miscellaneous; (xvi) people drawn into public life; (xvii) politics, politicians and elections; (xviii) sex and sexuality; (xix) state of the country (infrastructure and development); and (xx) unrest and violence.*

DETAILS OF THE 20 BROAD TOPICS AND SUB-TOPICS OF CLAIMS IDENTIFIED

> i. **ACCIDENTS, DISASTERS OR NEED** *(False claims related to accidents and disasters, and false claims of need to seek donation).* Two sub-topics.

False claim of need to seek donation; claim ref. accident or disaster.

> ii. **BUSINESS AND ECONOMY** *– False claims ref. businesses and business sectors, or a variety of economic indicators.* Four sub-topics.

Claim ref. a business or business sector; claim ref. cost of living, inflation; claim ref. employment levels, number of job seekers; claim ref. state of economy, trade, investment, debt.

> iii. **CELEBRITIES AND THE FAMOUS** *– False claims of celebrity deaths or, claims ref. behaviour or views of well-known people.* Four specific topics.

Claim ref. activity, behaviour or view of well-known person; claim well-known person is dead or near death.

> iv. **CRIME and JUSTICE** *– False claims ref. particular crimes, crime rates, policing, conviction rates, prison numbers, social factors in crime and more.* Thirteen sub-topics.

Claim a food or product has been poisoned; claim a particular type of crime or fraud is a threat; claim ref. a particular criminal case; claim ref. crime rates, risk of crime; claim ref. crime risks to children; claim ref. human rights violations; claim ref. juvenile crime; claim ref. laws, standards, rules of operation; claim ref. policing, conviction rates; claim ref. prison numbers, conditions; claim ref. who

is responsible for crime; claim related to torture, enslavement of individuals or groups.

> v.   **EDUCATION** *False claims ref. school attendance, funding and costs, performances and standards.* Five sub-topics.

Claim ref. attendance at schools; claim ref. government spending on, costs of education; claim ref. operation of exam system; claim ref. operation of teaching and schools; claims ref. performance levels, standards.

> vi.   **ENVIRONMENT** – *False claims ref. climate change, state of environment, energy sector, wildlife.* Three sub-topics.

Claim ref. climate change; claim ref. energy sector, renewables; claim ref. wildlife, wildlife protection.

> vii. **FINANCIAL AND OTHER OPPORTUNITIES** – *False claims of financial or other opportunities such as company giveaways.* One sub-topic.

Hoax claim of company giveaways.

> viii. **GENDER** – *False claims ref. attributes and status of genders, gender violence, code of dress, marriage laws and other relevant codes of behaviour.* Six sub-topics.

Claim ref. attributes and behaviour of the genders; claims ref. code of dress, behaviour for women; claim ref. economic and workplace status of genders; claim ref. gender abuse and violence; claims ref. marriage laws and practices; claims ref. sex trafficking, prostitution.

> ix. **GOVERNANCE** – *False claims ref. government success, spending, behaviour, cost of or access to services, cost of governance.* Eight sub-topics.

Claim of government competence, success; claim of government incompetence, failure; claim of inappropriate government spending; claim of negative behaviour by government officials; claim ref. corruption; claims ref. cost and level of politicians salaries; claim ref. cost of or access to government services; claim ref. international organisation.

> x.   **HEALTH** – *False claims on topics from false cures to symptoms, causes and prevalence of health conditions, diet and effect of activity, costs and quality of and access to healthcare.* Twenty sub-topics.

Claim a food or product has been poisoned, is deadly; claim of harm to health caused by a type of technology; claim of harmful activity by health practitioners;

claim a product or ingredient is a health cure or effective treatment; claim on effect of sexual activity on health; claim ref. availability and/or cost of health treatment; claim ref. causes of a health condition; claim ref. general health risks to children; claim ref. health effects of a particular condition; claim ref. effect of diet or activity on health; claim ref. level of public spending on health; claim ref. means of spread of a health condition; claim ref. prevalence of a health condition; claim ref. quality of health services; claim ref. risks of a health treatment or medication; claim ref. susceptibility or immunity to a health condition; claim ref. symptoms and/or effects of a health condition; claim ref. the actions of authorities in health crisis; claims of effect of diet, other on sexual activity; claims related to sexual and reproductive health.

xi. **INTERNATIONAL RELATIONS** – *False claims ref. foreign governments' activity or views, international disputes, public figures' relationship with foreign powers, etc.* Three sub-topics.

Claim ref. foreign government's actions or views; claim ref. international dispute; claims ref. public figures relationship with foreign powers.

xii. **JOB OFFERS** – *Fake claims of job opportunities at companies; often financial scams or harvesting user ID.* One sub-topic.

Claim a company or organisation is hiring staff.

xiii. **MEDIA** – *False claims about coverage of mainstream media, regulation of media. Imposter content claiming to be mainstream media content.* Three sub-topics.

Claim about coverage by mainstream media; claim about government regulation of media; claim information IS coverage by a named media.

xiv. **MIGRATION AND COMMUNITIES** – *False claims ref. size, behaviour, beliefs, economic and legal status of particular communities.* Six sub-topics.

Claim ref. behaviour of ethnic, racial or religious group; claim ref. cultural or religious practice or belief; claim ref. economic status of different communities; claim ref. ethnic or religious discrimination; claim ref. illegality by and/or legal status of immigrants; claim ref. size of migrant, ethnic, religious communities.

xv. **MISCELLANEOUS** – *False claims on topics from the natural world to hoaxes for show or audience, satire on misc. topics, random topics.* Five sub-topics.

Claim ref. natural world; Hoax for fun, show or to gain audience; random claim – not specific to a topic; ranking a miscellaneous feature in one country against the feature in others; satire miscellaneous topic.

xvi. PEOPLE DRAWN INTO PUBLIC LIFE – *False identification of person as implicated in public life, smear of those drawn into public life.* Two topics.

False identification of individual; smear of people drawn into public life.

xvii. POLITICS, POLITICIANS AND ELECTIONS – *False claims ref. election processes, results, politicians' views or activity, public opinion or support, political appointments and more.* Ten sub-topics.

Claim ref. candidates and parties' participation in elections; claim ref. election fairness, rigging; claim ref. election process; claim ref. facts of election results; claim ref. political and ministerial appointments; claim ref. political party's activities; claim ref. politician or party's policy or view; claim ref. politician or party's support; claim ref. politician's activity or person; claim ref. public mood or political protests.

xviii. SEX AND SEXUALITY – *False claims ref. norms of sexual behaviour, status of different sexual relationships, sexual behaviour of teenagers, different genders.* Five sub-topics.

Claim ref. norms of sexual behaviour; claim ref. same-sex relationships; claim ref. sex with animals; claim ref. sexual behaviour by genders; claim ref. teenage sexual behaviour.

ix. STATE OF THE COUNTRY (Infrastructure and development) – *False claims on state of infrastructure (road, rail, electricity, etc.) and development indicators.* Two sub-topics.

Claim ref. state of infrastructure; claim ref. status of key human development indicators.

xx. UNREST AND VIOLENCE – *False claims ref. security, civil unrest, politically linked violence, ethnic or religious conflict.* Four sub-topics.

Claim ref. civil unrest, politically linked violence; Claim ref. ethnic or religious conflict. Claim ref. government spending on military; Claim ref. state security or military issue.

(vii)   Whether claim or variant spread on multiple sources, occasions

It has been known for decades that, due to the so-called 'illusory truth' effect[30], individuals are more prone to believe information seen or heard from multiple sources, on multiple occasions.

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30   Vicol, DO. (2020) 'Who is most likely to believe and to share misinformation?' Full Fact (pp. 7–8) https://fullfact.org/media/uploads/who-believes-shares-misinformation.pdf

To understand the potential effect of a false claim on audience belief or understanding, it is thus useful to know whether the claim, or a close variant of it, has been spread widely in the recent past[31]. Based on information drawn from the fact-checks, each claim is categorised as:

1. Appeared on only one source, one channel – as reported in fact-check

2. Appeared from one source on more than one channel, short period (2 months or lesser)

3. Appeared on several (2–5) sources over short period (2 months or lesser)

4. Appeared on several (2–5) sources over an extended period (more than 2 months)

5. Appeared on numerous (6+) sources over short period (2 months or lesser)

6. Appeared on numerous (6+) sources over extended period

7. Details unclear in fact-check

(viii)   Whether claim forms part of a specific wider false narrative

One theory of misinformation effect suggests that individual examples of misinformation have greatest effect when they contribute to a widely accepted false narrative. The effect is caused, in this instance, by a combination of the 'illusory truth effect' (believing a false claim more readily because it has been seen repeatedly) and of its contribution to or reinforcement of an existing belief system or worldview. For this reason, the database records whether the false claims identified are part of a 'specific wider false narrative', and in the next category, what false narrative that is. Although many false claims may fit into a general false narrative such as the idea that 'all politicians are liars', for this question to be answered in the affirmative, the false narrative must be more specific, for example, that 'vaccines are harmful/deadly', 'crime is rising' (when it is not) or 'authorities are rigging the election' when they are not.

(ix)   Explanation of false narrative of which it's part

In this category, the database provides written details of the specific wider false narrative of which it is a part, and, where possible examples of other citations of the false narrative.

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31   The fact that a claim has been spread on multiple occasions does not, of course, guarantee that those who see the most recent version saw all previous ones, but it increases the probability.

(x)   Degree of distortion of reality in false claim

While all the database entries are false or misleading in some way, the degree to which claims distort reality differs. After previously categorising the 'type' of distortion of reality, the database recognises these differences of degree, categorising all entries as either:

1. Mostly or completely false

2. Includes substantial element of truth but misleading

3. Wrong in some aspect, but picture is broadly accurate

This is recorded on the premise that the degree of distortion of reality, in part, shapes the effect that the information has on audience understanding.

(xi)   Explanation of finding on degree of distortion

In this category, the database provides written explanation of the finding on the degree of distortion.

(xii)   Format or formats in which the claim spread

Many of the false claims identified in the database were made public in more than one format – first broadcast in an interview on TV or radio, and then related online or turned into a meme. Much existing research suggests that the format in which information was originally transmitted appears to have little impact on its effect on belief or understanding[32]. Nevertheless, the database records the format or formats observed for two reasons. Firstly, to test again whether the type of format in which the information is transmitted correlates in any way with greater or lesser effect on understanding. And secondly to understand the range of formats in which misinformation is observed, noting that while much post-2016 debate has focused on misinformation spread in online articles or memes, the range of formats is much greater.

> (i) Broadcasts statements (TV or radio); (ii) community rumours or myths; (iii) email statements; (iv) faked documents, web pages or sites; (v) memes shared online; (vi) official statements; (vii) photos or photo captions; (viii) product labels; (ix) public signs or posters; (x) speeches to live audiences; (xi) videos or video captions; (xii) voice notes or phone messages; (xiii) written news articles, written posts online or on messaging apps.

Although details of the format were unclear in the fact-check, that lack of evidence is recorded.

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32   See https://www.niemanlab.org/2021/01/yes-deepfakes-can-make-people-believe-in-misinforma
    tion-but-no-more-than-less-hyped-ways-of-lying/

(xiii)   Type of originator or promoter of the claim

To understand what and who drives misinformation, the database categorises the type of originator or promoter of the false claims by their professional or social role, so far as can be shown from the fact-checks. Who originates or spreads misinformation may also be a factor in amplifying or diminishing its effect. The study uses these data and considers possible correlation. Where those who originated or promoted the false claim fall into more than one category, these different categories are all recorded. The categories identified to date are as follows:

1. Academic or think-tank[33]; 2. Business or business leader; 3. Celebrity[34]; 4. Conspiracy theorist[35]; 5. Domestic media[36]; 6. Ethnic or religious activist[37]; 7. Foreign media; 8. Foreign politician; 9. Hoaxer or scammer[38]; 10. International organisation[39]; 11. Junk news site or FB page[40]; 12. Known or suspected

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33   This is decided based on who publishes the claim, not where it is published. It applies whether the claim is published in an academic journal, in mainstream media or on social media.

34   'Celebrity' refers to a famous person, notably in the field of entertainment or sport. It does not cover those who are famous for other reasons, such as prominent politicians or scientists, for example.

35   'Conspiracy theorist' refers to people or organisations promoting an established conspiracy theory, such as those related to vaccines or the politically motivated false claim that the Nigerian president had died and been replaced by a 'clone', and the media knows this but does not report it.

36   'Domestic media' refers to national and local broadcast, print and online media – where there is a news-driven editorial structure involved. It distinguishes this from domestic junk news and hyper-partisan media.

37   Refers to individuals or groups who, from information in the fact-check or online, appear to be activists promoting an ethnic or religious agenda (traditional and religious leaders are listed separately).

38   'Hoaxer or scammer' refers to individuals or publications who originate or promote false information intended to deceive either for amusement or financial reward. It does NOT refer to those who create hoaxes for political or social effect – who are referenced as political or social activists.

39   'International organisation' refers to organisations such as the African Union, WHO or UN agencies, which issue statements found in some way to be false.

40   The term 'junk news site or page' applies to online operations purporting to offer news, if analysis of the site suggests the majority of the content comprises false or misleading information.

political, social activist[41]**; 13. Labour union; 14. Myth – unknown origin**[42]**; 15. NGO/civil society organisation**[43]**; 16. Hyper partisan media or online forum**[44]**; 17. Politician or political party; 18. Religious leader or group; 19. Satirist or satire site**[45]**; 20. Self-styled health practitioner or site/page**[46]**; 21. Social media influencer/page**[47]**; 22. Social media user**[48]**; 23. State official**[49]**; 24. Self-styled expert in specialist field**[50]**; 25. Traditional ruler or community leader; 26. Unidentified bad actor online – political effect**[51]**; 27. Unidentified bad actor online – practical harm**[52]**; 28. Unidentified individual or group – offline.**[53]

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41 'Known or suspected political, social activist' refers to an individual, or group, who – from information in the fact-check or identifiable online, can be safely identified as a supporter of a political or social cause. This excludes online accounts that appear to support a cause but have no online back history. It does not include politicians or leaders of campaigns.

42 'Myth – unknown origin' refers to a myth that originated from an unknown source but now spreads on community networks, in media, on social media or elsewhere.

43 Refers to domestic NGOs/CSOs.

44 'Hyper-partisan media or online forum' refers to media (broadcast, print or online) or online fora such as Facebook groups or others – that promote exclusively one-sided information as news.

45 The term 'satirist' is applied to content creators or promoters who define themselves as satirists or parody accounts, save where another purpose can be proven.

46 This term applies to individuals, companies and media or news sites that present themselves as offering health services or advice – without recognised medical authority.

47 The term 'Social media influencer or page' is used to refer to an individual or page with at least 30,000 followers online, who is not already well known for their activities offline.

48 The term 'social media user' is used to refer to an online social media account believed to be genuinely that of a real individual – but one not identifiable as belonging to any of the other categories.

49 For example, a police official, army spokesperson or civil servant.

50 An individual who claims, and may have, expertise in a particular specialist field – not health.

51 This term is used for individuals or organisations who (i) have created a fake or imposter online account, (ii) knowingly fabricated false information, (iii) where that information has potential political effect. This can include political hoaxes – where the creator of the hoax is unidentified.

52 This term is used for individuals or organisations who (i) have created a fake or imposter online account, (ii) knowingly fabricated false information, (iii) where that information has potential harmful effects – beyond the political field.

53 Used for an individual or group offline – where they cannot be identified.

(xiv)   Type of channel or channels by which the claim spread

To understand the audience the misinformation/disinformation may have reached, and thus the effect it may have had, the database records the channel or channels by which it was known to have been transmitted. This is done using information from the fact-checks. This information is not exhaustive. Many fact-checks identify where they saw the false information but do not search beyond that. The channels identified are as follows:

1. Community networks; 2. Company or organisation website; 3. Domestic media; 4. Emails; 5. Foreign media; 6. Government documents, reports; 7. Hyper-partisan news website; 8. Junk news site; 9. NGO report; 10. Phone message; 11. Product label; 12. Public poster or signage; 13. Satire site; 14. Social media/messaging platform – Facebook; 15. Social media/ messaging platform – Instagram; 16. Social media/messaging platform – Messenger; 17. Social media/messaging platform – Twitter; 18. Social media/messaging platform – fact-check unclear on which; 19. Social media/messaging platform – WhatsApp; 20. Social media/messaging platform – YouTube; 21. Social media/ messaging platform – YouTube; 22. Speech at public event.

(xv)   Factors that caused or may have caused the claim to be created

The database identifies 12 factors that appear to have caused, or may have caused or contributed to, the false claim to be created – beyond the creator's adherence to a particular world view. Drawing on information in the fact-checks and from studies of misinformation, the factors proposed range from mistakes and lack of access to reliable information, to financial or political motivations.

1. Errors in understanding/explaining complex info and failure to verify simple claims

- *Make error in understanding and explaining complex information*
- *Fail to verify information they create and share either for lack of verification skills or reflex*

2. Lack of easy access to credible information to check false claims against

- *Create and share false information due to lack of easy access to credible information*
- *Restricted access to accurate official information*
- *Lack of trust in official information*

3. Bad actors create false information to cause harm to particular targets

- *To cause harm by spreading a computer virus*
- *To cause harm through malice to particular individual*
- *To cause harm through malice to a particular business or sector*

4. Unknown actors create false information for political or social effect

- *By sowing division between or distrust of particular communities; distrust in institutions; fears related to the economy or people's finances; fears related to crime; fears or panic in other fields or general*

5. Individuals, organisations, to raise their audience for financial or other reward

- *Hoaxer wanting the gratification of pulling a hoax*
- *Junk news sites or pages wanting to increase audience for financial reasons*
- *Satirist wanting either to make a point, or increase audience for financial reasons*
- *Social media influencer/page wanting to increase audience for financial, other reasons*
- *Social media user wanting to increase audience for gratification*
- *Traditional media wanting to increase audience for financial, other reasons*

6. Businesses, legitimate or illegitimate, with an agenda

- *Business talking down its competitors' performance, services*
- *Businesses talking up its performance, services, sector*
- *Business, organisations seeking attention – to promote their brand*
- *Self-styled health practitioners wanting to increase clients*

7. General public – no known affiliation

- *To promote information that they think helpful*
- *To engage in a public discussion or area of speculation*
- *To generate support for cause or point of view that matches theirs*
- *To undermine support for cause or point of view that contradicts theirs*

8. **Media with a political/social agenda**

- *To undermine support for a cause or point of view*
- *To generate support for a cause or point of view*

9. **Miscellaneous interests**

- *Individual or group seeking to deter or promote a particular behaviour[54]*

10. **Non-governmental organisations, campaigners**

- *To promote information that they think helpful*
- *To undermine support for a cause or point of view that matches theirs*
- *To generate support for a cause or point of view that contradicts theirs*

11. **Politicians, officials and social, political or religious activists**

- *To increase their own support*
- *To undermine support for an opponent*
- *To generate support for a policy or cause*
- *To suppress voting in an election*
- *To 'defend their people/religion', or 'stir division' (depends on viewpoint)*
- *To express or spread their fears of vaccines*
- *To promote belief in religious phenomena*

12. **Scammers and hoaxers seeking money or data**

- *Scammers seeking money or personal data*

(xvi)   Explanation of finding on factors that may have caused false claim

In this section, the database sets out an explanation of the finding on factors that have or may have caused or contributed to the creation of the misinformation. The motivation of some, such as financial scams or political smears is clear. In other cases, individuals who made false claims have acknowledged and explained an

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54   See this as an example: misinformation at a local level to deter behaviour a group objected to. https://factcheck.afp.com/no-johannesburg-has-not-banned-informal-waste-collectors

error. In such cases, the causes can be attributed with reasonable certainty. Where cause is hard to deduce this uncertainty is acknowledged.

(xvii) Factors that may have facilitated the spread of the claim

The database also identifies the factors that may have facilitated or played a part in facilitating the spread of the misinformation, over and above **two factors which are highly important, and mentioned in the report, but apply to most entries and hence not highlighted here**.

1. the availability and functionality of social media and messaging apps that enable and encourage sharing – particularly of emotionally charged content

2. the availability and functionality of other channels such as links between information that is broadcast via TV and radio and offline community networks, that or encourage sharing of information.

The factors the database identifies, **using evidence drawn from the fact-checks**, and evidence from **existing research on the reasons individuals share information**[55], are as follows:

1. Adherence to a pre-existing view, mindset or knowledge – including

- *Acceptance of a stereotype of community or group*

- *Adherence to conspiracy theories*

- *Strongly held views on identity-related issues*

- *Belief in supernatural or religious phenomena*

- *Adherence to and desire to spread or defend particular religious, political, social views*

- *Hostility to a foreign power*

- *Hostility to and/or lack of trust in those in authority/the elite*

- *Limited understanding of science*

- *Mindset that finds it acceptable to illustrate a situation with an image of another (real but different) situation*

- *Mindset that speculates about topic of public interest*

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55   Vicol, DO. (2020) 'Who is most likely to believe and to share misinformation?' Full Fact. https://fullfact.org/media/uploads/who-believes-shares-misinformation.pdf

2. **Emotional response to the information – including**

- *It confirms a pre-existing view of the world*
- *It is seen as an example to follow*
- *It is seen as funny/amusing*
- *It is seen as good news, provokes a sense of relief*
- *It is seen as shocking and daring or shocking and amazing*
- *It is something authorities/elite 'don't want people to know'*
- *It makes readers feel confirmed in their view and in the know*
- *It provokes anger, outrage*
- *It provokes empathy, pity, desire to help*
- *It provokes fears in general*
- *It provokes fears of danger to children*
- *It provokes interest in the lives of the famous*
- *It provokes the desire, need to secure a job offer or giveaway*
- *It provokes the desire to share information you consider helpful*

3. **Error and/or the lack of a verification reflex – including**

- *Individuals/organisations make error in understanding and explaining complex information*
- *Individuals/organisations fail to verify information they create and share either for lack of verification skills or reflex*
- *Individuals/organisations have restricted access to accurate official information*
- *Individuals/organisations lack trust in official information*

(xviii) Explanation of finding on factors that may have facilitated spread

In this section, the database sets out an explanation of the findings on factors that have or may have facilitated the spread of the misinformation, beyond the functionalities of social and traditional media. This is done through references to existing research into factors that facilitate the spread of information and evidence from the specific fact-check.

(xix) Potential durability of the false claim

Evidence from both cognitive science and longitudinal studies of belief in false information, suggests that much misinformation is, to cite Stephen Lewandowski's

word 'sticky' – belief in the false claim persisting even when reliable evidence is presented that the information is false[56]. Not all false information has the same effect, however. Not only do other studies show that repeated correction of false information can reduce belief in false information over time, but certain forms of false information are naturally less durable than others. The database categorises claims as

1. Easily disproven[57]
2. Naturally disproven by course of events
3. Potentially durable
4. Uncertain durability

(xx)   Explanation of finding on durability of false claim

In this section, the database sets out an explanation of the findings on the durability of the false information – based on evidence from the fact-check.

(xxi)   Type of claim's possible effects on belief or understanding

False information may have different effects on individuals' beliefs or understanding from no effect, where the information is not believed, to the creation of an entirely new false belief. Starting from a scale set out by Joseph Klapper in 1960, the database categorises false information as having, potentially one or more of the following effects – if believed.

1. Prevention of change in belief or understanding
2. Reinforcement of existing belief or understanding
3. Minor change in form, intensity of belief or understanding
4. Conversion from one belief to another or understanding
5. Creation of false new belief or understanding

(xxii)   Explanation of finding on type of effects on belief or understanding

In this section, the database sets out an explanation of the findings on the type of effects on belief or understanding based on evidence drawn from the fact-check such as (i) whether the situation described is new, (ii) whether responses suggest

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56   https://journals.sagepub.com/doi/10.1177/1529100612451018.

57   For example – so called 'fake death notices' claiming falsely that a prominent person has been killed.

the audience has pre-existing views on the topic and (iii) whether responses suggest views have been changed.

(xxiii) Whether the claim is actionable near term – if believed

The potential for false information to cause harm by changing individuals' beliefs or understanding, depends – in part – on whether or not the changed belief or understanding is one on which the individual has (i) the capacity and (ii) motivation to take some form of action that may be prejudicial to themselves or others.

For example, when misinformation circulates on messaging apps advising people to take a 'health cure', members of the public may have both capacity and feel motivated to follow the advice or suggest others in their circle do so. If the misinformation relates to a policy issue, individual members of the public may have limited capacity to act but policy-makers may be able to do so.

The database assesses each entry for evidence of the combination of audience capacity and motivation to act, based on evidence in the fact-check. Setting aside the question of whether the audience could either spread or peacefully protest the situation falsely defined, it asks whether either individual members of the public or policy-makers could take potentially harmful action, in the near-term, if they believed the false information, or whether there is no such action they would have the capacity and motivation to take. 'Policy-makers' are defined in these terms as anyone in a position to set or define the rules guiding the actions of others such as parliamentarians, members of the judiciary, health administrators and employers.

The database cross-checks these findings against evidence of actual harm to establish whether there is any correlation between whether and by whom misinformation is actionable and harm.

(xxiv) Explanation of finding on actionability

In this section, the database sets out an explanation of the findings on actionability, based on evidence in the fact-checks and cross-checking with evidence of actual harms caused.

(xxv) Type of 'consequential effect' – if claim believed

Not all changes of belief or understanding cause an action or feeling that has any consequence. Others do or may bring a change of some value to the individual or society, whether to their benefit or harm. This section of the database identifies whether, according to the best evidence available, the changes in belief or understanding if they occur may have led or might contribute to potential effects for

individuals or society. Based on evidence from the fact-checks, further investigations and studies, entries are rated as

1. No actual or potential consequential effect identified

2. Actual or potential beneficial effect identified

3. Actual or potential harmful effect identified

(xxvi) Explanation of finding on type of consequential effect

In this section, the database sets out an explanation of the findings on the type of consequential effect identified. If the effect is identified as of no consequence, or actually or potentially beneficial, the reason for and details of that finding are explained here.

(xxvii) Degree of confidence claim caused actual harm

The degree of confidence that a claim in the database directly caused harmful effects varies from cases to case. The database categorises that confidence as follows (see below the subsequent field where we explain the evidence)

1. No evidence was identified that the claim caused actual harm

2. Evidence suggests claim may have caused actual harm

3. Strong evidence shows that the claim caused actual harm

(xxviii) Field and form of actual harm caused

The database then sets out the field in which the actual harm was caused, and the form, or sub-field, of the harm identified. The fields identified are as follows:

1. **Physical harms** – *from vigilante and gender-based violence to harms to individuals' and public health*

2. **Harms to mental health** – *from personal distress to public alarm*

3. **Harms to fairness, social cohesion** – *from entrenching negative stereotypes to enflaming social divisions*

4. **Harms to the justice system** – *from distorting particular cases to judicial policy*

5. **Harms to the political system** – *from suppressing voting, to distorting the focus of debate*

6. **Harm to business, economy** – *from company reputations to economic policy*

7. **Harms to the environment** – *from endangering wildlife to distorting policy focus*

8. **Harm to international relations** – *from distorting public understanding to government policy*

9. **Harm to individuals' finances, practical harms** – *from financial loss to identity theft, and the spreading of computer viruses*

10. **Harm through distorted understanding of the natural world** – *miscellaneous*

(xxix) Evidence of actual harm caused

In this section, the database sets out an explanation of and evidence for the findings on actual harm caused, with links to sources where appropriate.

(xxx) Whether claim had potential to cause harm

The database then identifies whether evidence suggests that the false claim has the potential to cause harm and how. The fields identified are as follows:

1. Yes, subject to conditions

2. Yes, through cumulative effect

3. No apparent potential to cause substantial harm*

(*other than reduction in faith in information sources in general – an effect discussed in the report)

(xxxi) Field and form of harm claim had potential to cause

The database then sets out the field in which the actual harm was caused, and the form, or sub-field, of the harm identified. The fields identified are as follows:

1. **Physical harms** – *from vigilante and gender-based violence to harms to individuals' and public health*

2. **Harms to mental health** – *from personal distress to public alarm*

3. **Harms to fairness, social cohesion** – *from entrenching negative stereotypes to enflaming social divisions*

4. **Harms to the justice system** – *from distorting particular cases to judicial policy*

5. **Harms to the political system** – *from suppressing voting, to distorting the focus of debate*

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7. **Harms to the environment** – *from endangering wildlife to distorting policy focus*

8. **Harm to international relations** – *from distorting public understanding to government policy*

9. **Harm to individuals' finances, practical harms** – *from financial loss to identity theft, and the spreading of computer viruses*

10. **Harm through distorted understanding of the natural world** – *miscellaneous*

(xxxii) Explanation for finding on potential to cause harm

In this section, the database sets out an explanation of and evidence for the findings on the potential of the claim to cause harm, with links to sources where appropriate.

(xxxiii) Potential scale of harm – from one-to-one to one-to-many

The scale of the harm that can follow from misinformation depends in part on its audience: whether the harm is one they suffer, themselves, or one they cause to others and, in the latter case, their position to affect others through their role in their community or wider society. The database thus categorises potential harm as carried out:

1. One-to-one self
2. One-to-one other
3. One to many
4. Many to one
5. Many to many

(xxxiv) Evidence for finding on potential scale of harm

In this section, the database sets out an explanation of and evidence for the findings on the potential scale of the harm that may be caused, with links to sources where appropriate.

(xxxv) Potential durability of harm

The degree of harm that can follow from misinformation depends in part, also, on the permanence, or durability of that harm. In the simplest terms, harm that leads to individuals dying is permanent. A temporary increase in mental stress may be ameliorated over time.

The database categorises harms as:

1. Permanent
2. Durable

3.   Transitory

4.   Uncertain

(xxxvi) Evidence for finding on potential durability of harm

In this section, the database sets out an explanation of and evidence for the findings on the potential scale of the harm that may be caused, with links to sources where appropriate.

(xxxvii) Whether response to claim may have mitigated harm

Finally, the database identifies instances in which

(i)   the misinformation that was shared was questioned or fact-checked by the public and/or subject of the misinformation

(ii)   the originators responded either to this questioning of their claims or the questioning of their claims by the fact-checking organisations

Recent research from the United States[58] has suggested that the questioning of misinformation shared online, by members of the public who are sceptical about it, has a significant effect in reducing the spread and the perceived credibility of the information. The report both (i) cross-checks this evidence to determine whether there is any observable correlation between the questioning of the misinformation and evidence of harm and (ii) set outs the theoretical evidence mentioned above.

(xxxviii) Evidence for finding on mitigation of harm

In this section, the database sets out an explanation of and evidence for the findings on mitigation of harm.

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58   Bode, L, & Vraga, E. 'Americans are fighting coronavirus misinformation on social media'. *Washington Post.* May 7, 2020. https://www.washingtonpost.com/politics/2020/05/07/americans -are-fighting-coronavirus-misinformation-social-media/