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Introduction

Welcome to the exciting world of cyberpsychology! This book will provide insights into the range of key issues and debates in cyberpsychology to help you navigate the current evidence-base to draw some informed conclusions about the role of technology for individuals and society. The book is structured under four thematic headings: 'Concepts', 'Uses', 'Effects', and 'Society', each of which includes a series of chapters designed to introduce key debates in the field. I chose this particular format as there is no other cyberpsychology text that consolidates the literature through the perspective of key cyberpsychology debates. Most current books are structured more thematically by topic area to outline the key theories and insights. Whilst these have played a critical role in progressing the field, I felt that a book which situates the evidence around key debates could provide a useful 'go-to' guide for those seeking to resolve ongoing societal and academic debates. Whilst the book does not address all the current issues and debates or indeed all cyberpsychology topics, I have selected those that remain most relevant to contemporary Western debate and societal interest. As is the case with the wider discipline of psychology and other cyberpsychology resources, the book will largely adopt a Western perspective on the issues.

Within the field of cyberpsychology, there are ongoing conceptual and practical issues, so one of the objectives of this book is to identify these within relevant chapters and note practical recommendations as appropriate. In the general absence of solid conceptual frameworks, we may be compromising methodological validity in our measurement of cyberpsychological phenomena. Whilst core psychological frameworks can be drawn upon to establish how these apply in the cyberpsychology domain, it is also the case that these will not always be relevant or appropriate to all the issues we study. Cyberpsychology can continue to progress with ongoing conceptual care and scrutiny. In the spirit of this, Chapter 2 forms Part 1, 'Concepts', in which I introduce cyberpsychology as a field, distinguish it from other cognate disciplines, outline some of the prominent perspectives in the field, and provide an account of how I see the role of debate in advancing scientific and societal understanding of the issues. This sets up subsequent chapters, which handle specific conceptual issues in more detail and move the discussion to how these are perhaps best resolved.

Part 2, 'Uses', begins with a chapter on 'technology use'. In it, I start by outlining the various conceptualisations of what we may mean by technology 'use'. Within the literature, this has been conceptualised in different ways within different fields and so I present a conceptual framework that outlines how these disparate perspectives could be better integrated. This includes the

literature on technology uses and gratification, technology acceptance, affordances, behaviours, engagement, as well as overuse. Better conceptual integration here can afford us a much better understanding of what we mean when we refer to 'technology use' and its various components and processes.

Chapter 4 addresses 'online citizenship' and is intended to help answer some societal questions, such as 'why is our behaviour different online than in the real world?' I start by outlining the discourses around the way we describe our online experiences. In particular, I highlight the potential issues we face when we consider our online behaviours as being entirely separate from the self or our 'real-world' contexts. The chapter then moves on to find resolution in a number of debates which underpin this, such as the dubious 'digital native' vs. 'digital immigrant' debate. This is followed by a critical consideration of how debates which seek to compare categories of behaviour as 'online' vs. 'offline' are limited in addressing meaningful phenomena.

Chapter 5, the last of the three chapters in Part 2, addresses the issue of 'screen-time vs. screen use'. Whilst on the surface these may appear to refer to the same thing, I discuss the ways in which the two can be conceptualised and therefore measured in distinct ways. I begin with a brief outline of the conceptual challenges in 'screen-time' debates, and move on to distinguish how 'uses' may be the underpinning functions which 'screen-time' can seek to measure. I provide a conceptual framework with indicative behaviours to illustrate where these distinctions may be realised, with suggestions around measurement.

Having so far been concerned with a range of relevant issues and debates as to how we understand different types of use and behaviour in relation to technology and the internet, Part 3, 'Effects', is where we really start to drill down to some of the pertinent societal debates. As concerns about the effects of technology and the internet are widespread in society, Chapters 6–9 tackle some of the relevant issues. Chapter 6 advances the issues noted in Chapter 5, by discussing the existing evidence about the so-called effects of 'screen-time'. This goes some way to address current questions, such as 'how does screen-time relate to mental health?' The chapter presents existing knowledge of the effects of technology and the internet on physical health and psychosocial functioning, and provides a critical perspective of the way in which researchers might best advance their efforts in this area. In general, I recommend retiring a 'screen-time' approach and instead concerning ourselves with specific uses and behaviours that are more psychologically interesting and insightful.

Chapters 7 and 8 focus more specifically on social media to discuss 'social media and relationships' (Chapter 7) and 'social media and well-being' (Chapter 8). Chapter 7 poses the question, 'how "real" are online friends?', and goes on to illuminate debates about how social media (and online relationships more generally) are often considered the 'poor relation' of human relationships. After introducing theoretical perspectives to help understand these issues, I then pose the rather obvious question, 'how social is social media?', which, it seems, lacks a substantial evidence-base at the time of writing. To draw out some practical considerations, I review the evidence to help underpin the range of ways we can be 'social' on social media. This is intended to advance

scholarship in the field, where the focus can be more on the behaviours and interactions on social media rather than ‘social media use’ *per se*.

Following on from a focus on relationships, Chapter 8 addresses ‘social media and well-being’. This is important given the deep societal interest in this issue to help answer questions such as, ‘is social media making us depressed?’. Here, I present a conceptual framework that advances our understanding of these issues. It applies the ‘what’, the ‘how’ (outlined in Chapter 7), and the ‘why’ (WHW framework) of social media use, to illustrate how these are prerequisites to add nuance to understanding how these relate to aspects of well-being.

Chapter 9, the final chapter of Part 3, is on ‘digital games effects’. Similar to Chapter 8, the effects of digital games are well represented in everyday societal debate. Chapter 9 begins by posing the question, ‘do violent video games make us aggressive?’. The chapter takes a similar approach to Chapter 8, and breaks down the debates around the effects of digital games by considering the ‘what’, the ‘how’, the ‘why’, as well as the ‘where’ and the ‘who’ of this phenomenon. This provides a useful conceptual approach to better account for how digital games may relate to said effects.

In Part 4, ‘Society’, I address the public and societal-facing role of cyberpsychology. In Chapter 10, titled ‘Using online data’, I look at what is meant by online data, given that this can refer to many things. I outline the ethical implications of how consent operates in the way we provide online data. The remainder of the chapter outlines the range of ways online data is used in varying contexts such as legal uses, security uses, and commercial uses. This illuminates the extensive range of online data which exists and how cyberpsychology may intercept some of these to better understand contemporary human behaviour.

The final substantive chapter is Chapter 11, titled ‘Cyberpsychology in the world’. It highlights the role of cyberpsychology outside academic spheres. Here I make reference to its role in media and public debate, policy and practice. For each of these, I use examples largely from my own experience to illuminate how cyberpsychology insights can directly impact on these processes. In an ever-evolving technological world, the role of cyberpsychology will grow and therefore I argue for making it more visible in society.

To draw things to a close, the concluding chapter provides some reflections on the future of cyberpsychology. Here, I identify what advancements in theoretical and practical elements are required. To initiate the latter of these, I provide a pragmatic framework with example research questions to help start such a movement. Whilst this is by no means intended to be exhaustive or sufficient, I believe it may be of help to researchers in their subsequent research planning.

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PART **1**

Concepts

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What is cyberpsychology?

The British Psychological Society (BPS) describes cyberpsychology as ‘a scientific inter-disciplinary domain that focuses on the psychological phenomena which emerge as a result of the human interaction with digital technology, particularly the internet’ (BPS, 2019). Cyberpsychology is a sub-discipline of psychology, within which we apply core theoretical principles to online settings and, in some cases, seek to derive new theoretical understanding of these experiences. In this sense, it is both an application of the psychology that we know, as well as a pioneering area that is developing new knowledge of human behaviour. When defining technology and the internet, this can cover a broad range of examples. Technology largely refers to devices such as smartphones, tablets, PCs, games, and gaming consoles. The internet is the infrastructure of connectivity that draws these technologies together (Attrill-Smith, Fullwood, Keep, & Kuss, 2019). This is distinct from the ‘World Wide Web’, which is instead the tool through which we access domains available on the internet (Attrill-Smith et al., 2019).

A number of interchangeable terms are evident in work in this area. The terms ‘digital’, ‘online’, ‘net’, ‘tele’, ‘virtual’, ‘e-’, and ‘cyber’ are often used to refer to the same notion but perhaps require further scrutiny. Arguably, ‘digital’ and ‘e-’ (short for ‘electronic’) do not necessitate internet connectivity in the same way as the others do. ‘Digital’ is often used when referring to things like ‘digital literacy’ and ‘digital divide’, which typically relate to knowledge pertaining to technology and its affordances. ‘e-’ is often used when referring to everyday activities which may have an electronic alternative, such as e-health, e-commerce, and e-fitness. Interestingly, these usually do require internet connectivity to fulfil tasks, yet the ‘e’ is now considered a somewhat ‘old-fashioned’ prefix. The term ‘net’ has largely become extinct in the literature, although sometimes it is used to describe the ‘net generation’. ‘Online’, ‘cyber’, and ‘virtual’ are most often used interchangeably and can be considered to refer to the same thing. Interestingly, for some concepts, one term tends to be favoured over others, such as ‘cyber-sex’, as we rarely see reference to ‘virtual sex’ or ‘online sex’. However, in other cases different prefixes may be used to refer to the same concept (e.g. cyber-bullying and online bullying). For the purposes of this book, I will use online, cyber, and virtual interchangeably and restrict my use of other terms in an attempt to avoid confusion.

There is some confusion about how cyberpsychology is different from human-computer interaction (HCI), which is a well-established field and which also arguably draws together the interactions between humans and

technology. HCI tends to focus more on the interaction between the human and the machine, by exploring the interactivity and usability of systems such as computers. It has a key focus on the design, implementation, and evaluation of the computing systems that humans use. This, in my view, is how cyberpsychology differs from HCI. Cyberpsychology has more traditionally been focused on the effects and impacts of technology use and the internet, and not contributed so much to our understandings of the components of use itself. This is illustrated by the fact that HCI overlaps strongly with areas such as user experience (UX) design and user-centred design (UCD), which are strongly centred on the capacity and efficacy of systems, whereas cyberpsychology often positions itself further away from these concerns. This is not to say that cyberpsychology is not relevant to these issues; on the contrary, it is entirely relevant, but has typically forged a path in parallel to these disciplines.

Other cognate sub-disciplines include cybernetics, which is perhaps more similar to HCI in its focus on the control and communication in the animal and machine (Wiener, 1948). In contrast, areas such as Media Psychology, Internet Psychology, and Web Psychology are seen to be more closely linked with cyberpsychology. Broadly speaking, cyberpsychology typically covers three main areas: (1) our motivations for using technology and aspects of the internet; (2) how we interact with others using technology and the internet; and (3) the effects and impacts associated with using technology and the internet. This is distinct from fields such as Media Psychology, for example, which is more concerned with the impacts of media consumption on an individual and societal level.

Taking these three main areas of cyberpsychology, we can start to map out common trends and paradigms that are prevalent within the field. First, the study of motivations for using technology and aspects of the internet largely seeks to understand why people choose to use or engage in certain online activities or behaviours. Popular conceptual approaches to this area include uses and gratifications theory (LaRose & Eastin, 2004; LaRose, Mastro, & Eastin, 2001) and mood management theory (Zillmann, 1988a, 1988b, Zillmann & Bryant, 1985), although these are probably more central to media psychology. Interestingly, these tend to relate to using or engaging in certain online behaviours or activities but not so much to using technological devices themselves. In line with this, there is a substantial literature focused on technology adoption utilising theories such as the 'Technology Acceptance Model' (Marangunić & Granić, 2015), which is a socio-cognitive theory of the factors that encourage people to initiate technology use. However, this does not tend to readily enter into the scope of cyberpsychology and instead sits more centrally in technology and education. I discuss technology use and these perspectives in further detail in Chapter 3. Interestingly, a lot of the literature on our motivations for using technology and the internet tends to situate this as an individually driven behaviour. However, this tends to overlook the fact that technology use largely operates at the societal, political, and economic levels, limiting how these theories can be used to fully understand technology use in the twenty-first century.

The second main area in cyberpsychology relates to human interactions online, where we explore issues such as how our online interactions vary from our 'real-world' interactions, and how this relates to the quality of our relationships and social ties. Many of the debates surrounding this are situated in the sub-area of computer-mediated communication (CMC). CMC largely refers to human communication that occurs between two or more electronic devices, via email, instant messaging, chat rooms, text messaging, or social networking sites. CMC became very popular upon the development of Web 2.0, which was a much more functional and interactive environment for users and thus was better equipped to host interaction between users. Most research in this area has focused on asynchronous vs. synchronous interaction, online vs. offline communication, paralinguistic aspects of CMC (e.g. emoji, textisms), and how CMC potentially alters human behaviour relative to 'real-world' settings. I cover some of this in Chapter 4. Popular theoretical perspectives in this area include hyper-personal theory (Walther, 1996), displacement hypothesis vs. stimulation hypothesis (Neuman, 1988; Valkenburg & Peter, 2009), social capital theory (Putnam, 2000), and the online disinhibition effect. The majority of these will be covered further in Chapter 7. However, much of the aforementioned issues about online interactions are focused on human-human interactions and less so on interactivity in intelligent systems or with algorithms. These issues are pertinent to twenty-first century interactions and communication.

The third main area of cyberpsychology, arguably the principal area of societal debate, is that of the impacts of technology and internet use. Here, research looks at the association between the amount and type of use, with psychosocial variables relating to both positive and negative well-being. Recent theoretical perspectives which lend themselves to this debate include the Digital Goldilocks hypothesis (Przybylski & Weinstein, 2017), which I look at in Chapter 8. The debates here remain highly volatile and pertinent in a society that is concerned about the harmful effects of technology, and the role of cyberpsychology here is very important. More is discussed on the role of cyberpsychology for public debate in Chapter 11. A general observation here is that a lot of the discussion is devoted to the volume of technology use (time spent using, frequency of use) but arguably this is not especially enlightening when theorising about potential psychological and social effects.

Another major limitation of the 'technology effects' literature, particularly when theorising about behavioural outcomes, is a general lack of focus on theoretical models underpinning behaviour change. That is, behaviour is vastly complex and motivated by a broad range of factors, as is acknowledged in most theoretical models of behaviour change, including the 'COM-B system' (Michie, van Stralen, & West, 2011) and the Theory of Planned Behaviour (Ajzen, 1985, 1991; Ajzen & Madden, 1986). As such, technology effects perspectives that theorise that technologies lead to behavioural outcomes or changes would benefit from further integration of these scientific insights.

Whilst the above areas are not an exhaustive list, they do broadly cover the key approaches and issues addressed by cyberpsychology. A theme common to all these is the methodological approach taken by researchers. Self-report

cross-sectional survey methodology dominates cyberpsychology (Howard & Jayne, 2015), meaning research may be limited by inaccurate estimates of technology usage behaviour (Ellis, 2019; Sewall, Bear, Merranko, & Rosen, 2020), poorly developed psychometric scales (Howard & Jayne, 2015), and limited knowledge of long-term effects (Kaye, Orben, Ellis, Hunter, & Houghton, 2020). There are vast opportunities to advance cyberpsychology insights by applying greater rigour and attention to its conceptual foundations and methodological approaches. Further discussion of these issues will be found in Chapters 3, 5, and 6.

One of my key motivations for writing this book is the tendency to assume the existence of dichotomies in this area of study, with any debate regrettably becoming polarised. Whilst I am not against debate in principle (indeed, this can be a key part of advancing perspectives and understanding of issues), what I struggle with is the tendency for society (and researchers) to create dichotomies in the rhetoric surrounding technology and internet use, largely in relation to their impact. In terms of research, it is evident that the epistemological perspectives we adopt drive our conceptual assumptions about technology use and its impacts. This is not unique to cyberpsychology, but evident across disciplines and sectors. In the case of technology use and impacts, we often see a divide between the ‘technology for good’ perspective and ‘technology is harmful’ perspective. Dunbar (2016) uses the terms ‘cyberpessimists’ and ‘cyberoptimists’ to distinguish between the adherents of these two perspectives when discussing the effect of the internet on our social lives, for example. Unfortunately, adding to the mix is the tendency for society to lean towards a technology panics rhetoric, which has been evident throughout the technological revolution. In this ‘Sisyphean cycle of technology panics’ (Orben, 2020), any new technology tends to create societal panic, motivating researchers to attempt to study it, but scientific progress is too slow to help inform policy and public understanding and so the panic persists. Whilst individual researchers may have their own epistemological take on these issues and opt to take a certain ‘side’ in the debate, it may come as a shock to some that these perspectives can actually exist side by side when teasing out the nuances of the issue. For example, in the case of social media effects (which we will be covered in further detail in Chapter 8), benefits and harms are both conceivable yet dependent on a number of factors, such as:

- **What?** – what content people are being exposed to. If two people are using the same social media platform for the same amount of time, but seeing different content, this may lead to two entirely different outcomes. In some cases, some of this content could be harmful and this, of course, is an area for concern.
- **How?** – how much people are using. Irrespective of content, the amount people are using and the level of their interactions with others will likely have an impact on any well-being outcomes.
- **Why?** – irrespective of what the content or actual usage is, people use social media for different reasons. For some people this may be the only way of fulfilling social needs, whereas for others it may be a helpful supplement.

I thus propose the WHW framework ('what-how-why' framework), and whilst this isn't exactly revolutionary as a name, it serves the purpose of supporting efforts in this area. This reflects other recent commentary about these issues in which a distinction has been made between technology-centred and user-centred approaches (Meier & Reinecke, 2020). Namely, technology-centred approaches tend to focus almost exclusively on volume of use (time, frequency), whereas user-centred approaches focus more on why people use technology. Interestingly, a lot of existing cyberpsychology research focuses on measuring the former as a way of exploring how technology use relates to psychological outcomes, yet the user-centred questions actually seem more psychologically interesting.

Adopting a more user-centred perspective may be one way of reducing the apparent dichotomy to help progress our understanding of the phenomena at hand. Certainly, epistemological positions which largely relate to technology-centred approaches tend to lead researchers to select certain theoretical perspectives over others. For example, those who view technology as bad may fail to recognise the affordances it can provide. They may therefore elect to explore technology from the displacement perspective, demonstrating how spending time using technology and the internet is reducing the time spent on more 'meaningful' activities. Results in line with this therefore will illuminate the negative role of technology on individuals and society. However, those seeking to evidence the benefits of technology may instead seek to further understand the specific technological uses, affordances, and behaviours which enrich our lives and thus may have a positive impact. The purpose of this book is to provide a review and resolution based on our current knowledge and evidence of these issues, to draw out the key learning points in moving forward in a more coordinated fashion. Certainly debates will continue to prevail in cyberpsychology, but reducing polarisation and dichotomies in thinking can be a helpful way of moving the field forward. This advancement is not only scientifically and academically important, but also pertinent to support societal debate and public policy. Indeed, Chapter 11 will elucidate the specifics of this issue and draw attention to why a critical synthesis of available evidence is paramount to informing public debate and discourse. Cyberpsychology is therefore critical in addressing the current confusion and contradictions in existing academic and public debates.

References

- Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckmann (Eds.), *Action control* (pp. 11–39). Berlin: Springer.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50 (2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Ajzen, I., & Madden, T.J. (1986). Prediction of goal-directed behavior: Attitudes, intentions, and perceived behavioral control. *Journal of Experimental Social Psychology*, 22 (5), 453–474. [https://doi.org/10.1016/0022-1031\(86\)90045-4](https://doi.org/10.1016/0022-1031(86)90045-4)

- Attrill-Smith, A., Fullwood, C., Keep, M., & Kuss, D. (2019). *Oxford handbook of cyberpsychology*. Oxford: Oxford University Press.
- British Psychological Society (BPS) (2019). *Cyberpsychology Section*. Retrieved 17 July 2020 from: <https://www.bps.org.uk/member-microsites/cyberpsychology-section>
- Dunbar, R. (2016). Do online social media cut through the constraints that limit the size of offline social networks? *Royal Society Open Science*, 3, 150292. <https://doi.org/10.1098/rsos.150292>
- Ellis, D.A. (2019). Are smartphones really that bad? Improving the psychological measurement of technology-related behaviors. *Computers in Human Behavior*, 97, 60–66. <https://doi.org/10.1016/j.chb.2019.03.006>
- Howard, M.C., & Jayne, B.S. (2015). An analysis of more than 1,400 articles, 900 scales, and 17 years of research: The state of scales in cyberpsychology, behavior, and social networking. *Cyberpsychology, Behavior and Social Networking*, 18 (3), 181–187. <https://doi.org/10.1089/cyber.2014.0418>
- Kaye, L.K., Orben, A., Ellis, D.A., Hunter, S.C., & Houghton, S. (2020). The conceptual and methodological mayhem of 'screen-time'. *International Journal of Environmental Research and Public Health*, 17 (10), 3661. <https://doi.org/10.3390/ijerph17103661>
- LaRose, R., & Eastin, M.S. (2004). A social cognitive theory of Internet uses and gratifications: Toward a new model of media attendance. *Journal of Broadcasting and Electronic Media*, 48 (3), 358–377. https://doi.org/10.1207/s15506878jobem4803_2
- LaRose, R., Mastro, D., & Eastin, M.S. (2001). Understanding Internet usage: A social-cognitive approach to uses and gratifications. *Social Science Computer Review*, 19 (4), 395–413. <https://doi.org/10.1177/089443930101900401>
- Marangunić, N., & Granić, A. (2015). Technology acceptance model: A literature review from 1986 to 2013. *Universal Access in the Information Society*, 14 (1), 81–95. <https://doi.org/10.1007/s10209-014-0348-1>
- Meier, A., & Reinecke, L. (2020). Computer-mediated communication, social media and mental health: A conceptual and empirical meta-review. *Communication Research*. <https://doi.org/10.1177/0093650220958224>
- Michie, S., van Stralen, M.M., & West, R. (2011). The behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Implementation Science*, 6, 42. <https://doi.org/10.1186/1748-5908-6-42>
- Neuman, S.B. (1988). The displacement effect: Assessing the relation between television viewing and reading performance. *Reading Research Quarterly*, 23 (4), 414–440. <https://doi.org/10.2307/747641>
- Orben, A. (2020). The Sisyphean cycle of technology panics. *Perspectives in Psychological Science*, 15 (5), 1143–1157. <https://doi.org/10.1177/1745691620919372>
- Przybylski, A.K., & Weinstein, N. (2017). A large-scale test of the Goldilocks hypothesis: Quantifying the relations between digital-screen use and the mental well-being of adolescents. *Psychological Science*, 28 (2), 204–215. <https://doi.org/10.1177/0956797616678438>
- Putnam, R.D. (2000). *Bowling alone*. New York: Simon & Schuster.
- Sewall, C.J.R., Bear, T.M., Merranko, J., & Rosen, D. (2020). How psychosocial well-being and usage amount predict inaccuracies in retrospective estimates of digital technology use. *Mobile Media & Communication*, 8 (3), 379–399. <https://doi.org/10.1177/2050157920902830>
- Valkenburg, P.M., & Peter, J. (2009). Social consequences of the Internet for adolescents: A decade of research. *Current Directions in Psychological Science*, 18, 1–5. <https://doi.org/10.1111/j.1467-8721.2009.01595.x>

- Walther, J.B. (1996). Computer-mediated communication: Impersonal, interpersonal, and hyperpersonal interaction. *Communication Research*, 23 (1), 3–43. <https://doi.org/10.1177/009365096023001001>
- Wiener, N. (1948). *Cybernetics: Or control and communication in the animal and the machine*. New York: The Technology Press/Wiley.
- Zillmann, D. (1988a). Mood management: Using entertainment to full advantage. In L. Donohew, H.E. Sypher, & E.T. Higgins (Eds.), *Communication, social cognition and affect* (pp. 147–171). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Zillmann, D. (1988b). Mood management through communication choices. *American Behavioral Scientist*, 31 (3), 327–340. <https://doi.org/10.1177/000276488031003005>
- Zillmann, D., & Bryant, J. (1985). Affect, mood, and emotion as determinants of selective exposure. In D. Zillmann & J. Bryant (Eds.), *Selective exposure to communication* (pp. 157–190). Hillsdale, NJ: Lawrence Erlbaum Associates.

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