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# Risky (information) business: an informational risk research agenda

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## Abstract

**Purpose** – The purpose of this conceptual paper is to suggest that the growing sociocultural theorisation of risk calls for a more robust research focus on the role that information and in particular, information literacy, plays in mediating hazards and danger.

**Design/methodology/approach** – Starting by tracing how information has been conceptualised in relation to risk through technoscientific, cognitive and sociocultural lenses, the paper then focuses on emerging sociocultural understandings of risk to present a research agenda for a renewed sociocultural exploration of how risk is shaped through the enactment of information literacy.

**Findings** – The paper identifies and examines how information literacy shapes four key aspects of risk, including risk perception, risk management, risk-taking and "at-risk" populations. These four aspects are further connected through broader themes of learning, identity, work and power, which form the basis of the sociocultural risk research agenda.

**Originality/value** – This paper is the first study bringing together the many understandings related to how risk is informed and establishes risk as a key area of interest within information literacy research.

**Keywords** Information literacy, Risk, Research agenda, Information work, Information practices, Informational risk

**Paper type** Conceptual paper

## 1. Introduction

Risk plays a prominent role within many societies today. Associated with the growth of an increasingly litigious health and safety culture, risk is also implicated in many Western governmental initiatives, including the growing reliance on nudge economics (Thaler and Sunstein, 2008), which uses carefully planned messaging to influence responsible decision-making. Most recently, risk has come to prominence within the COVID-19 pandemic when people were forced to either make or abide by decisions made for them about the personal, social and economic risks of becoming infected with the SARS-2 virus (Brown, 2020; Finnikin and Spiegelhalter, 2021). The importance that is placed upon risk calls for a detailed examination of the role that information plays in shaping responses to hazard and danger, including in everyday as well as more specialised health and political contexts. More specifically, the need to understand the information strategies that people employ to learn about and deal with perceived danger demands a renewed focus on the role that information literacy, which is defined as "a way of knowing the many environments that constitute an individual's being in the world" (Lloyd, 2017), plays in shaping responses to risk. While the concept of risk has long played an important role within the broader field of Library and Information Science (LIS), for example, related to risk assessment within digital preservation and curation (e.g. Frank, 2020), there has been far less emphasis on the role that information literacy plays in recognising and shaping responses to risk within everyday life. This focus forms the basis of the paper.

The need for this work is extended through the growing sociocultural theorisation of risk rather than the more typical technoscientific perspective. The concept of risk is often

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automatically associated with risk assessment, which refers to health and safety measures designed to prevent injury. Information plays a vital role within this approach to understanding risk, including being linked to dealing with danger in both Griffin *et al.* (1999) *risk information seeking and processing (RISP) model* and Kahlor's (2010) *risk information seeking model* (RISM). However, the emphasis that this work places on objective calculations of risk obscures the social and cultural contexts in which risk is brought into being. Another popular understanding of risk is the risk society, Beck's (1992) and Giddens's (1991) visions of the ways in which society organises in response to the hazards of modernity, including constant change and cultural breakdown. While the risk society thesis emphasises the contextual shape of risk, the crux of this work remains focused on expert responses and the individualisation of society rather than everyday responses to situated hazards. From an information perspective, these emphases are problematic because they preclude broader theorisation about the ways in which risk and information are entwined; research remains focused on how authoritative information is sought and processed (e.g. Griffin *et al.*, 1999; Choo, 2017) rather than the multiple ways in which risk is constructed and configured, as in a sociocultural approach. It also removes considerations of learning from understandings about how risk is informed or the role that information literacy plays in mediating questions of danger within everyday social contexts.

This conceptual paper addresses these concerns by presenting a research agenda for informational risk, which refers, in this study, to any way in which information is implicated within the conceptualisation, construction and experience of risk. As a concept, informational risk is not widespread but has traditionally been used to refer to risks that information might pose, including the risk of sharing identifiable patient information (e.g. Fisher *et al.*, 2020) or the risk that financial or economic information might not be accurate (e.g. Dănescu *et al.*, 2013). The definition of informational risk used in this research agenda broadens these ideas to focus on how information shapes or mediates risk rather than the risks that data and knowledge may, in themselves, pose. In centring on how people become informed about danger, informational risk draws upon the conceptualisation of information as "any difference which makes a difference" (Bateson, 1972, p. 386), a sociocultural perspective that acknowledges the importance that meaning and value plays within the development of knowing. This definition of informational risk also acknowledges that information forms a "red thread" (Bates, 1999, p. 1048) that runs throughout and connects people's lives, an understanding that further enables us to examine how conceptualisations of risk are shaped within and in relation to everyday information environments.

The basis for this emerging conceptualisation of informational risk is a selective review and close reading of sociocultural literature related to risk, information and information literacy. This approach, which was inspired by Dalmer and Huvila's (2019) conceptual examination of information work, led to the identification and examination of four key aspects of risk that are shaped through the enactment of information literacy. These four aspects of risk are further analysed to produce a research agenda that places sociocultural approaches to risk and information literacy in dialogue with each other rather than in isolation. The literature search that forms the basis for this work centred on extensive searching of relevant databases and reference chaining and was carried out as part of a series of research projects exploring information literacy within sociocultural approaches to risk. Nonetheless, the paper's emphasis on discussion, debate and the value for future study means that the review does not claim to be exhaustive or systematic.

The worth in a research agenda that moves beyond technoscientific traditions and the individualisation of experience lies in the elaboration of richer knowledge about the role that information plays within risk contexts. A greater focus on the sociocultural contexts in which risk is negotiated extends research by shifting attention from the personal characteristics that might "predispose" people to manage hazards (e.g. Griffin *et al.*, 1999; Kahlor, 2010) to the development of risk knowledge in everyday life, including how information activities constrain

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and enable the construction of risky objects, places and people. At the same time, a focus on information literacy extends research by drawing attention to how people learn to conceptualise and respond to risk, rather than merely focusing on how "legitimate" risk knowledge is assimilated (e.g. Choo, 2017). The implications for how we understand and mediate the social world means that this research agenda is of importance to everyday life and health information research as well as the continued theorisation of information literacy (e.g. Lloyd, 2017).

## 2. Conceptualising risk

Risk is notoriously hard to define. Traced back to the seventeenth century in English and even earlier in Latin, risk was traditionally connected to objective dangers within the natural world, such as the likelihood that a storm would compromise a maritime voyage (Zinn, 2009, p. 9). Social change linked to the industrial revolution consequently led to risk being reimagined in terms of human fault as uncertainty began to be seen as both calculable and, as a result, manageable (Brown, 2015). Since then, the concept of risk has become commonplace within both expert and popular discourse where it is predominantly understood as undesirable and harmful danger (Zinn, 2016). However, while the concept of risk may now be familiar, the term encompasses a wide variety of meanings, all of which have distinctive understandings for its connections with information.

### *2.1 Technoscientific and cognitive approaches to risk*

One of the most prominent ways in which risk has been conceptualised is through a technoscientific or cognitive perspective (also known as the realist perspective (Jasanoff, 1998) or psychometric paradigm (Slovic, 1987)). A technoscientific perspective emerges from the scientific tradition and positions risk as an objective material phenomenon (Zinn, 2009). Centring attention on calculation and modelling, the technoscientific approach to risk is illustrated most clearly in the Royal Society (1992) frequently cited definition:

> The probability that a particular adverse event occurs during a stated period of time or results from a particular challenge.

A robustly positivist definition that emphasises mechanical forecasting of danger, the technoscientific approach positions objective knowledge as key to managing risk, including how people respond to expert risk judgement. These features are mirrored within cognitivist approaches to risk, which share several similarities with the technoscientific approach while focusing more concretely on behavioural response. Emphasising factors that are seen to influence how people calculate risk, such as personality traits (e.g. Wildavsky and Dake, 1990), this approach to risk often highlights limitations or interferences to the assimilation of risk information. More recently, affect has been seen to play a far more important role within cognitive approaches to risk, but these studies still tend to position emotion as impeding a person's ability to appropriately identify and respond to danger (Lupton, 2013b).

### *2.2 Sociocultural approaches to risk*

A secondary way in which risk has been conceptualised is through a sociocultural lens (also known as the social science (Renn, 1998), constructivist or discursive approach to risk (Jasanoff, 1998)). Emerging in the 1970s (Burgess, 2015) and emphasising the social, political and economic contexts in which hazards are negotiated, a sociocultural perspective positions risk as never completely recognisable outside of a social setting, as can be seen in Rosa's (2003) definition:

> a situation or event where something of human value (including humans themselves) is at stake and where the outcome is uncertain.

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Centring the risk observer as well as what matters to them, the emphasis on value and uncertainty further draws attention to how risk is constructed within everyday life as well as the role that situated and embodied knowledge play in shaping these understandings. One of the most distinct ways in which these ideas have been explored is through the risk society perspective (Beck, 1992), which views the modern era as increasingly structured by large-scale, globally manufactured risks such as environmental disaster. Highlighting how risk forms an inescapable danger, albeit one that is interpreted within sociocultural contexts, Beck's work focuses attention on macro-structural levels of society and individual decision-making in relation to social transformation. Giddens (1991), who was writing at a similar time, parallels Beck's emphasis on the dangers of future-oriented globalisation while foregrounding the role that expert knowledge plays in mediating hazards.

At the same time, the prominence of the risk society thesis means that other sociocultural approaches to risk have often been obscured, including Mary Douglas' (1966), cultural/symbolic perspective. Mary Douglas forms a prominent theorist of sociocultural approaches to risk who differs from Beck and Giddens through her emphasis on the continuity of social organisation rather than catastrophe (Wilkinson, 2001). The cultural/symbolic perspective, which emerges from her anthropological work on purity and pollution, positions risk as brought into being through cultural concerns, including what is considered to constitute a risk as well as how "risky" it is thought to be. A resolutely community-oriented perspective, the cultural symbolic perspective emphasises the role that social interaction and political process play in identifying and mediating risk. In further emphasising that risk is constructed through embodied local experience as well as access to specialist knowledge, Douglas (1992) draws attention to the ways in which people deal with danger, including purposeful risk-taking. The cultural/symbolic perspective consequently adopts a relativist position to risk wherein "phenomena exist that may harm people's health or wellbeing in some way" (Lupton, 2013a, p. 42), but these phenomena are shaped and labelled through sociocultural processes rather than forming absolute truths. Differentiated from both the absolutism of the technoscientific approach to risk and the structuralism of the risk society, the cultural/symbolic approach opens research to broader questions related to the mutability of risk as well as the role that knowledgeable practices play in defining and constructing harm.

A second sociocultural approach to risk that has typically been less commonly explored in relation to information is the governmentality perspective, which positions risk as a strategy designed to regulate and manage social groups and populations. Often linked to Foucault's (1991) writings on power, the governmentality approach to risk is shaped in relation to eighteenth century political developments that positioned people as populations that needed to be managed rather than feudal subjects (Lupton, 2013a, p. 115). From this perspective, risk becomes reinterpreted as a technique of governance or the means through which political authorities enforce appropriate social activity (Burgess, 2015). A post-structuralist position, which renders risk as only knowable through social and political discourse, the governmentality approach focuses on institutional actions rather than cultural concerns, as in Douglas' work. However, in emphasising the disciplining of citizens, it also draws attention to the ways in which expert knowledge and ways of knowing are employed by the state to control its populace, including through establishing and enforcing behavioural norms. These ideas open risk research up to broader questions related to the exercising of power, including how risk knowledge is used to establish guidelines for acceptable behaviour as well as how people draw from this advice to regulate their own social activity.

## 3. Literature review

To date, most writing that has explored the connections between risk and information has taken a sociotechnical or cognitive view of risk. Positioning information seeking as key to risk

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management, these approaches are most famously exemplified through Griffin *et al.* (1999) *Risk Information Seeking and Processing Model* (RISP), a model that aims to identify the personal characteristics that predispose people to seek risk information. However, in focusing so concretely on individual information processing capacities, the model limits itself to an objective view of risk and an inherently rational model of information seeking behaviour. A similarly technoscientific understanding of risk is also seen within health literature that examines the impact of identified risk factors for illness or disease upon information activity (e.g. Kahlor, 2010; Meadowbrooke *et al.*, 2014). A slightly different approach is noted in Catellier and Yang (2012) and Huurne and Gutteling (2008), who attempt to account for the roles that affect and trust have on risk information activity. Notwithstanding, the very linear models of activity that are presented in this work, as well as the positioning of affect as obstructing information behaviour, indicates that this work still maintains an underlying cognitive perspective. Wilson's (2010) work examining how perspectives of risk influence information sharing presents a similarly individualistic or uni-dimensional view of the role that information plays in understanding risk.

In contrast, far less attention has been paid to the role that information plays within sociocultural approaches to risk. Choo (2017), for example, adopts the risk society thesis to examine the role that information avoidance plays in mediating danger yet his emphasis on precursors of risk information behaviours indicates a return to a more cognitive focus. Similarly, while Nara (2007) centres uncertainty rather than probability in his exploration of information literacy and risk, his emphasis on individual attributes suggests a traditional risk conceptualisation. The work of Hicks (2018, 2019) and Lloyd and Hicks (2021), who use a sociocultural lens to explore risk in relation to educational transition and the COVID-19 pandemic respectively, provide two exceptions. Drawing upon the work of Douglas (1992), these studies diverge from technoscientific research by positioning risk as produced through engagement within new information landscapes in relation to discourses that position people within a sociocultural framework (Lloyd and Hicks, 2021). In further highlighting how risk is both brought into being and mitigated through information literacy practice, which includes a broad range of physical, social and epistemic information activities, these studies also move research beyond its overwhelming focus on information seeking to integrate a consideration of how sensory and social engagement shape an understanding of risk as well as the ability to cope with it (Hicks, 2018, 2019).

Risk features within other areas of LIS research although these studies often present a muddied conceptual landscape. One of these strands of literature is the work of Chatman (1996), who establishes risk as a key concept that defines an impoverished lifeworld. Linking risk with whether it is worthwhile or safe to share an information need, Chatman's (1996) theoretical work has since been picked up by Gibson *et al.* (2021), who draw out how young people of colour use risk assessment strategies to establish where it is safe to seek or share information. Bringing a geographic focus to risk (also see Cole and Watkins, 2015), these studies appear to draw upon the sociocultural positioning of risk as something of personal value, but this conceptualisation is not made explicit. A second strand of LIS literature centres on people who are seen to be "at risk", a moniker that has been attached to young mothers (e.g. Buchanan and Nicol, 2018), non-traditional students (e.g. Jiao *et al.*, 1996), migrants (e.g. Fisher *et al.*, 2004) and older people (e.g. Goodall *et al.*, 2014). Typically employed within research that aims to characterise barriers to information use as well as to argue for more appropriate information interventions, the "at-risk" designation is most associated with the governmentality perspective (Foucault, 1991). However, the positioning of risk in a regulatory capacity (Zinn, 2009) to establish and police norms of information activity is rarely drawn out within these studies.

## 4. Risk and information

The paper will now focus on identifying and exploring informational risk more closely, which is defined in this study as how information is implicated within the conceptualisation,

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construction and experience of risk. More specifically, the paper considers four key aspects of risk: risk perception, risk management, risk-taking and at-risk populations. These four aspects of risk were identified through a selective review and close reading of sociocultural literature related to risk, information and information literacy. The frequent conceptualisation of risk as something negative or to be avoided (Lupton and Tulloch, 2002, p. 113) means that research to date has typically focused on risk perception. However, as danger becomes understood as shaped by social values, a sociocultural perspective further includes questions of risk management and risk-taking under the broader risk umbrella. To these aspects is added the concept of "at-risk" populations, a label that is often applied yet rarely interpreted alongside other risk-related ideas. The emerging shape of informational risk is presented in Figure 1.

Within the context of this paper, the sociocultural perspective adopted for this review is specifically understood to refer to Douglas' (1986, 1992) framing of risk, which positions dangers or hazards as shaped through social, material and corporeal dimensions of practice. Together, these dimensions construct a network of discourses, knowledges and institutions that shape and structure everyday understandings of risk. A person's understanding about risk is consequently formed in relation to how information is produced and legitimised within a specific setting. The recognition that the operationalisation of information practices catalyses the construction of knowledge further situates learning and the formation of subjectivity at the centre of sociocultural understandings of risk. In adopting this theoretical approach, the paper recognises that a sociocultural label could encompasses other approaches to risk, including the work of Beck and Giddens and that Douglas' work has been critiqued for offering a partial perspective on risk (Wilkinson, 2001). However, the emphasis that she places on local action, which resonates with sociocultural understandings of information literacy, means that the cultural/symbolic perspective is seen to provide a rich framing for this initial exploration of informational risk.

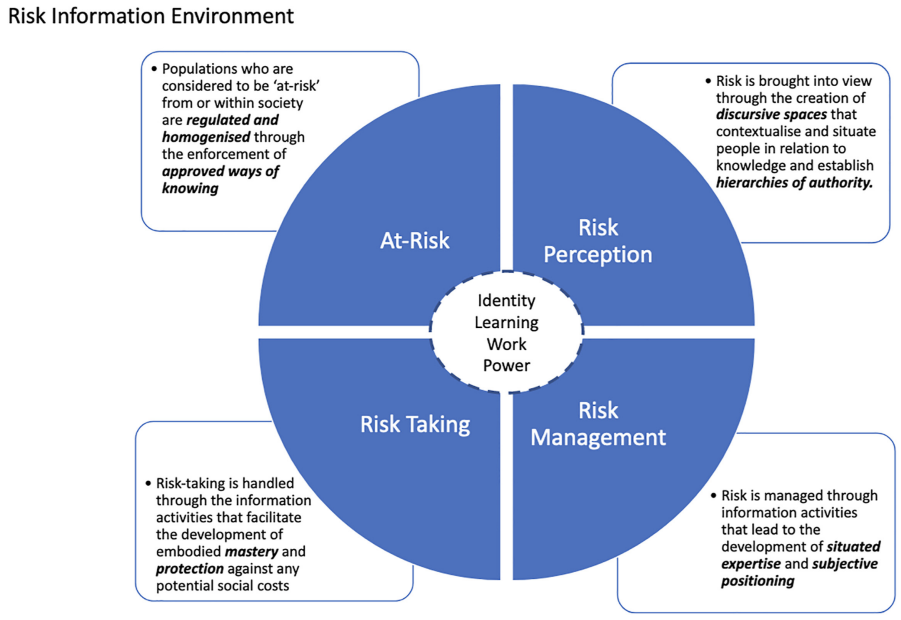



**Figure 1.**
Aspects of informational risk

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*4.1 Risk perception*

Risk perception, which refers to how people become informed about and alerted to risk, forms one of the first ways in which information is linked to risk research. In technoscientific, cognitive, risk society and governmentality approaches to risk, the association with risk perception (which is also known as risk assessment (Slovic, 1987)), is very clear; people become aware of risk through the transmission of expert information. Working from the belief that people "will act responsibly if they only knew the facts," (Horlick-Jones and Prades, 2009), these ideas position risk identification as connected to a temporary information deficit and resolved through the accumulation of evidence (Hobson-West, 2003). These ideas are further developed by the association of risk perception with mass-media, in particular, questions of panic or over-reaction (Wilkinson, 2001, p. 12). These authors focus attention on the discovery and use of official information channels, including how expert messaging could be improved through educational interventions (Seear, 2009). As Alaszewski (2005, p. 102) points out, when people seem to be making irrational decisions, "the professional's response is to work harder to convey the risks." Work has been done to temper the "innocent model of risk" (Douglas, 1992, p. 30), wherein the public is perceived to be oblivious to hazard, by drawing attention to the impact that emotions (Slovic *et al.*, 2004), confidence and motivation have upon risk perception (Griffin *et al.*, 1999). However, the emphasis on what impedes the orderly perception of risk demonstrates that the underlying premise of these studies remains centred upon the linear transmission of risk knowledge.

In contrast, when risk is viewed from a sociocultural perspective, phenomena are "singled out and labelled as "risks" (or not, as the case may be)" through social and cultural processes (Lupton, 2013a, p. 42) rather than constituting objective hazards about which the public needs to be informed. From an information perspective, this framing shifts questions about risk perception from the transmission of technical expertise to the construction of risk or how risk is brought into being. Thus, in a study of the COVID-19 pandemic, Lloyd and Hicks (2021) illustrate that health, financial and social risks are configured through discourses that position people in relation to a specific pandemic identity, such as being vulnerable or on furlough. Pointing to how risk is instrumentalised within information landscapes, these findings also indicate that risk perception is linked to agency or a person's capacity to act within a specific setting. The important role that discourses play in prescribing certain ways of conceptualising risk raises additional questions about the relationship between risk, information and power or how risk perception is tied to social regulation. In her study of twin pregnancy, for example, McKenzie and Carey (2000) trace how references to risk within health information encounters and pregnancy texts reinforce biomedical authority while simultaneously undermining and discrediting other sources of information, including the female body. Illustrating the role that authoritative knowledge plays in shaping how risk comes to be known, these findings also raise questions about how the identification of risk becomes entangled with cultural imperialism (Førde, 1998).

Beyond complicating understandings about how risk is given substance, a sociocultural approach to risk also problematises how people recognise and become aware of risk; if, as Douglas and Wildavsky (1982) argue, cultural context influences how people perceive risk then risk must be understood as shaped in relation to knowledge that is more local and contextual than the universal science that non-experts are expected to react to (Wynne, 1996). The premise that "risk is never fully objective or knowable outside of belief systems and moral positions" (Lupton, 2013a, p. 43) consequently focuses attention on the various forms of knowledge that people draw upon to establish risk, including physical and social acts (Lloyd and Hicks, 2021). Cole and Watkins' (2015) categorisation of risk awareness as being shaped by how near, far, or immediately at risk that people feel, for example, introduces a temporal and spatial dimension to risk perception, an idea that is also brought into view through the outlining of "danger zones" in Gibson *et al.*'s (2021) study of information seeking among teens

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of colour. Similarly, the recognition that emotions play "a vital part of the body's anticipation of the moment" (Thrift, 2004, p. 67) institutes a consideration of how forms of embodied knowing, such as gut feelings, shape what is perceived as risky. The understanding that people assess risk in the context of their own lives further centres attention on how discourses of risk emerge and are consolidated, including how knowledge about danger acquires authority (Jasanoff, 1998; Lupton, 2013a, p. 48).

### *4.2 Risk management*

Risk management refers to how people mediate and deal with risk and forms a second way that information is linked to risk. Just as with risk perception, information has often been seen as playing a straightforward role within technoscientific and cognitive understandings of risk management; the assertion that knowledge "reduce[s] the possibility of undesired harmful outcomes" (Alaszewski, 2005, p. 102) means that people are seen to deal with risk through building a "sufficiency" of information (Griffin *et al.*, 1999). Reflecting rational models of communication, wherein risk knowledge is treated as straightforward as well as easy to access (Alaszewski, 2005, p. 102), these understandings position risk as mediated through information gathering or cognitive efforts to fill gaps between what is known and what is "needed" to be known to be able to deal with an issue (Griffin *et al.*, 1999, p. 237). At the same time, the assumption that this information will be trusted, as evidenced by the onus that is placed on processing information rather than evaluating it, indicates that information gathering must be more honestly recognised as directed towards compliance with expert advice rather than accommodating broader forms of inquiry, an idea that is also reflected in Beck's risk society thesis (Wynne, 1996). Risk management consequently becomes reframed in terms of the regulation of "healthy behaviour," a conceptualisation that further reflects neoliberal ideas of individual responsibility (Keshet and Popper-Giveon, 2018, p. 184).

Conversely, a sociocultural perspective extends the focus of risk management from the translation of prescriptive expert knowledge to "the subjective processes by which people make sense of risk" (Mythen, 2008, p. 302), which references information literacy practice. Drawing from the premise that risk is shaped in relation to "frameworks of everyday lived experience" (Mythen, 2008, p. 306), the emphasis on situated meaning refocuses attention on how people draw upon "culturally rooted . . . forms of collective, public knowledge" (Wynne, 1996, p. 46) to mediate threats, including prior knowledge and embodied experience, amongst other resources (Jasanoff, 1998). Thus, Gibson *et al.* (2021) note that teens of colour employ a variety of different information strategies to mediate "danger zones," including "testing" a potential information source for tolerance or observing adult reactions to disclosures and activities. While these activities constitute forms of information gathering, the search is concentrated on tapping into (Lloyd and Wilkinson, 2017) social and embodied forms of knowing rather than absorbing expert knowledge. At the same time, an emphasis on context also acknowledges that information seeking does not form the only way in which information literacy helps to deal with hazards. The recognition that the overseas language-learners in Hicks' study (2018) mitigate risks through noting and recording information as well as mediating their experiences to friends and family back home, for example, illustrates that risk is managed through sharing and using information as well as accessing it. Research that demonstrates how people manage chronic illness through monitoring and tracking their health (e.g. McKinney *et al.*, 2019) provides a further suggestion of the important role that technology plays in dealing with risky events.

Beyond extending understanding about the range of information activities that facilitate risk management, a sociocultural approach to risk also challenges the underlying premise that becoming informed forms the only aspect of information that will mediate danger. Information avoidance, for example, has typically been seen as problematic within a technoscientific and

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cognitive approach to risk due to the widespread perception that more information is the only response to hazard (Hobson-West, 2003). However, when risk is presented as embedded within everyday associations, including "economic constraints and emotional commitments" (Horlick Jones and Prades, 2009, p. 409), avoidance becomes reframed as a form of localised, rational expertise rather than a deviant activity (Seear, 2009). In Seear's study of endometriosis, for example, the perception that "totalising" medical injunctions are both financially and physically impracticable illustrates that women manage the risks of their condition by ignoring advice that will expose them to additional dangers. Along the same lines, the recognition that smoking forms a resource for reward, stress reduction or sociability means that smokers may avoid anti-smoking informational campaigns to manage the challenge to their identity and self-worth (Gjernes, 2008, 2010). As Goffman (1961, p. 188) points out in relation to his work in asylums, it is "prescribed being" or an enforced sense of self that people default from rather than "prescribed activity". These ideas are further underscored through the recognition that information may heighten risk, including by increasing uncertainty rather than reducing it (Alaszewski, 2010, p. 124) or draw attention away from alternative ways to manage risk, including the provision of material support (e.g. Brand *et al.*, 2014).

### *4.3 Risk-taking*

Risk-taking, which is defined as an activity that involves some form of risk or danger, constitutes a less explored but equally important way that information is connected to risk. Comprising a form of risk management, risk-taking has traditionally been understood as both a foolhardy and an irrational activity; people are assumed to be risk-averse or to always choose according to self-interest in a technoscientific, cognitive and risk society approach to risk (Douglas, 1992, p. 102). From this perspective, risk-taking is said to emerge from ignorance and an "inefficient" handling of information (Douglas, 1992, p. 13) or a lack of ability to regulate the self (Lupton and Tulloch, 2002, p. 114). Drawing upon understandings about the "civilised' body, wherein people are increasingly expected to control and manage the human form (Lupton, 2013a, p. 179), the emphasis on accountability is reinforced within prevailing neoliberal approaches to healthcare that encourage people to take responsibility for their health by avoiding taking risks (Keshet and Popper-Giveon, 2018, p. 184). Given these disapproving attitudes, it is, perhaps, not surprising that information has not been widely explored in relation to risk-taking.

However, when risk is understood as a product of sociocultural meaning and understanding, the concept of risk-taking becomes far more open to interpretation. The emphasis on how people value and make sense of risk, which highlights that what is risky to one person may not be considered as dangerous to another (Lupton and Tulloch, 2002, p. 114), means that risk-taking must additionally be understood as a deliberate and skilful activity rather than merely as the action of an irrational actor (Lyng, 1990). From an information literacy perspective, the focus on intentional risk-taking centres attention on how people develop and draw upon skilled bodily performance to navigate dangerous activities (Zinn, 2016, p. 349). It also highlights how people develop the mastery and control that is needed to mediate the boundaries of social norms or the line between self and environment. Thus, the recognition that skydivers "spend more time preparing for a jump than they do making it" (Lyng, 1990, p. 874), including checking their equipment and rehearsing the sequence of their formations, illustrates how risk-taking is mediated through the development of situated expertise rather than luck or "mental toughness" (Lyng, 1990, p. 859). Similarly, the blurring of boundaries that extreme sports enthusiasts note between themselves and the technologies that they rely on, such as kayaks, ropes or racing cars, demonstrates how risk is mediated through "being one with [a] machine . . ." (Lupton, 2013a, p. 214) or the development of embodied and nuanced ways of knowing.

At the same time, risk-taking can also be far less liberating, as Chatman (1996) points out. Playing a key role in her theory of information poverty, risk-taking sits alongside secrecy and

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deception as critical concepts that "serve as the basis for defining an impoverished life-world" (Chatman, 1996, p. 193). In this framework, the perceived high cost of revealing and sharing information means that people can only take the risk of engaging with an information source if it is either trusted or has been proved worthy of belief (Chatman, 1996, p. 197). Janitors, for example, are seen as unable to share information for fear it would be used against them, which subsequently contributes to their feelings of isolation (Chatman, 1990). Developed through reference to diffusion theory and the concept of relative advantage, information poverty theory extends understanding of connections between information and risk-taking by drawing attention to the social structures that shape how people respond to and manage risk (Chatman, 1996, p. 204). The recognition that social systems often reward risk-taking, for example by defining appropriate information literacy activities, further demonstrates how risk-taking both emerges from and enforces power inequalities (cf. Zinn, 2016, p. 351). Chatman's ideas are developed through the work of Gibson *et al.* (2021) who note that while teens and tweens of colour may be forced to take unacceptable risk, they also develop "defensive strategies" to mitigate costs, including avoiding problematic interactions or feigning compliance. Providing a further illustration of the power imbalances that structure information spaces, the emphasis on protective information activities nonetheless draws attention to how people actively mediate challenges, unlike has often been assumed (cf. Haider and Bawden, 2007).

### *4.4 "At-risk" populations*

The concept of an "at-risk" person or population forms a final way in which risk and information are connected. In fact, the notion that some groups are vulnerable or likely to be affected by certain (problematic) social outcomes has become one of the more commonly accepted risk discourses within information literacy literature, with authors applying this moniker to a broad range of people, including first-generation students (e.g. Knecht and Reid, 2009) and expectant mothers (Buchanan and Nicol, 2018). Within this framing, a person's "at-risk" status, which refers to the higher-than-average likelihood of being exposed to harm or loss, is seen to be intensified by the employment of poor or under-developed information skills. Groups are subsequently often subjected to a range of additional support measures, including information literacy instruction, to mediate these disadvantages. The wish to support marginalised groups means that the "at-risk" label is hard to challenge; interventions are typically further aligned with access and social justice aims (e.g. McDowell and Vetter, 2022). However, the singling out of certain social groups as particularly susceptible to risk factors can also be understood as constituting a form of regulation wherein undisciplined bodies must be managed to be rendered productive or utilisable (Lupton, 2013a, p. 115). Emerging from a governmentality approach to risk (Foucault, 1991), these classifications have several implications for understanding the connections between risk and information literacy.

One of the most obvious impacts that the "at-risk" label has is upon the way in which information literacy is understood. As this paper has explored, a sociocultural perspective positions information literacy as the means through which people develop understanding about risk, a situated approach that emphasises local constructions of danger. However, when risk is employed to survey and categorise populations, including through designating who is considered to be "at-risk," information literacy becomes reframed as the means to enforce a governmental agenda, or certain approved ways of being. In positioning deviant bodies as a threat to the cohesiveness of society (Douglas, 1986, p. 59), for example, the "at-risk" label frames information literacy as both normative and normalising, where only particular kinds of information activity are valid. Similarly, the emphasis on regulating or correcting divergent behaviour means that the designation of risky populations also conceives of information literacy as a form of coercive power, or a "hegemonic conceptual tool" that is designed to maintain

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societal power structures (Lupton, 1993, p. 432). Reframing information literacy as a pedagogy of surveillance and control, these ideas are further underscored through the weight that is accorded to intervention, which positions people as only "reclaimed as safe and good" through expert-led rehabilitation (Shoveller and Johnson, 2006, p. 55).

The assumption that an "at-risk" status is both caused by and resolved through individual control also frames information literacy as a means of self-governance wherein people are expected to minimise risk through a continual pursuing of self-improvement and betterment. Reframing people as rational choice actors, the belief that responsibility for risk avoidance and protection lies upon the individual rather than the state means that the "at-risk" label deflects attention from the contextual and structural shape of information literacy practice. The privileging of the self who can exert "strong control over . . . mind and body" or engage in self-denial for the good of society (Lupton, 2013a, p. 134) also means that the "at-risk" label binds information literacy into a problematic moral and virtue imperative wherein working to improve oneself constitutes a form of penance (Shoveller and Johnson, 2006, p. 54) for the sin of not "planning and rationally choosing" a future (SmithBattle, 2000, p. 30). In effect, voluntary compliance with institutional conceptions of who or what constitutes danger risks sabotaging the transformative potential of information literacy by denying its sociopolitical dimensions; people are cultivated to focus on "self-actualization rather than emancipation" (Lupton, 2013a, p. 119). The "at-risk" label also jeopardises agentic oversight of information landscapes by dissolving the notion of a subject in favour of a combination of risk factors (Castel, 1991, p. 281). This strategy further challenges the involvement of mediators by framing intervention in terms of "flows of population" rather than face to face relationships (Castel, 1991, p. 281).

### *4.5 Summary: informational risk*

This review has demonstrated that information and information literacy play a key role within four key aspects of risk. In terms of risk perception, risk is brought into view through the creation of discursive spaces that contextualise and situate people in relation to knowledge and establish hierarchies of authority. For risk management, information facilitates the development of the situated expertise and subjective positioning that is needed to manage danger. This includes the mastery required for risk-taking as well as protection against any potential social costs. At the same time, information also becomes a tool for regulating and homogenising populations who are considered to be "at-risk" from or within society.

## 5. Research agenda

The four identified aspects of risk challenge existing understandings and introduce new considerations to how risk is informed. These aspects are further connected through broader themes of learning, identity, work and power (see Figure 1), which form the basis of the informational risk research agenda.

The emphasis that a sociocultural perspective places upon becoming alerted to risk means that one of the most obvious components of any future research agenda is the need to integrate a more robust focus on the relationship between information and learning within everyday understandings of how people perceive and mitigate danger. Education has always played a key role within risk research; "at-risk" communities are prescribed additional teaching time while the conveying of hazards is central to risk communication models (Alaszewski, 2005). However, the ongoing framing of effective information transfer (Lee and Garvin, 2003) as the basis of behavioural change illustrates that research still shies away from situating complex understandings of human development at the heart of risk interaction. The conflation of learning with information access further "neglect[s] the work . . . that makes

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becoming informed possible" including the role that resources, time and social relationships play in shaping understandings of risk (Dalmer, 2018, p. 132). More interesting questions would centre on how people develop an understanding of risk, particularly within changing or unstable environments, or the conditions that shape how people are able to deal with these challenges. The transformational shape of human development means that future research should also focus on the danger that is inherent in learning itself, including related to stigma, innovation and self-care. The inseparability of information and learning mean that considerations about how to "reconcile [these] differences of opinion on risk" are, as Douglas (1992, p. 132) suggests, far too important to be limited to a call for "better" teaching.

A second concept that snakes throughout the four identified aspects of risk relates to identity and the role that information and information literacy plays in supporting shifts in subjectivity. As various risk researchers have pointed out, labelling something as a risk is "to recognise its importance to our subjectivity and wellbeing" (Lupton, 2013a, p. 6), an idea that acknowledges how risk may trigger face-work (Goffman, 1967) as people are forced to both confront and develop an "at-risk" identity (Harzheim *et al.*, 2020, p. 2). Future research could draw upon sociocultural information literacy research, which explicitly recognises that shared understandings of performance are developed through the construction of information landscapes, to explore how people draw upon sites of knowledge to develop the agency to act within or in relation to risky contexts, objects and places (Lloyd, 2017). Research could also centre on how people draw upon intersubjectively shaped information landscapes to resist the objectification and disciplining of their body (cf. Gjernes, 2010, p. 485), for example, when risk is used to stigmatise smokers. The recognition that risk discourses may also impose certain types of subjectivities on people, including through defining responsibilities or self-management techniques (Hallowell, 2006, p. 10) and that resistance to risk, which constitutes a form of expertise, creates alternative subject positions (Armstrong, 2005, p. 165), provides a further illustration of future directions for research.

A third thread that runs throughout these four identified aspects of risk is a consideration of the labour that is involved within risk-focused information activities, including the many "different and taken for granted forms of work that people do to shape their experiences" (Dalmer and Huvila, 2019, p. 99). Referring to "the actual labor – the time, effort, resources, and outcomes—necessary in finding and using information" (Hogan and Palmer, 2005), the concept of information work was first established by Corbin and Strauss (1985), who noted the considerable amount of effort that went into the management of chronic illness. Given the complex "emotional and time-consuming" nature of information work that has been noted within healthcare (Dalmer and Huvila, 2019), future research should examine the implications of these ideas within the management of risk, including totalising (Seear, 2009) demands to find, use, evaluate, share and organise information-and the emotional ramifications of dealing with the consequences of these requests (Dalmer and Huvila, 2019). Research should also draw upon these ideas to explore inequities in risk information work, including the constant monitoring and mediating of advice that is required during pregnancy (McKenzie and Carey, 2000), and the additional information burdens associated with the imposition of an "at-risk" label. Difficulty in coping "day-to-day, financially or health-wise" with the energy that this ongoing information work consumes means that prospective studies should also account for the "luxury" of being able to consider the future (and the risks therein) in any degree of detail (Brown *et al.*, 2013, p. 482).

A final area of future research relates to power, which features prominently throughout the four identified aspects of risk. Institutional power, for example, shapes the discursive spaces that situate people in relation to risk, while "at-risk" populations are labelled as such through reference to legitimised forms of knowledge and ways of knowing. Gibson *et al.* (2021) have started to broach these ideas through highlighting how tweens of colour navigate risky library power structures and imbalances. Future research could build on these ideas to further trace the role that information literacy and expert knowledge plays in the surveillance

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and disciplining of populations, including how risk discourses enable the state to exert control over the bodies of citizens. How people mediate conflicting risk evidence provides another avenue of future research, particularly when both the risk and its management are socially contested, as in the case of attention deficit hyperactivity disorder (ADHD). Another example would be to focus on how people establish and build awareness of hazardous objects and places in the face of official scientific risk assessments, for example, related to the health effects of local industry (Horlick-Jones and Prades, 2009). Pointing to well-worn tensions between expert and lay person and local and specialised forms of knowledge, a focus on power relations should also interrogate the connection between information literacy and self-regulation, which could be considered to form a "voluntary" form of compliance with powerful and normative ideals. The positioning of hard-to-find environmental risk information as an expression of good mothering further draws attention to the need to examine questions of empowerment in more detail (AbiGhannam and Atkinson, 2016, p. 463).

## 6. Conclusion

Information features prominently within risk research, but the role that it plays in shaping responses to danger is rarely theorised in detail. This is particularly the case as the field moves beyond technoscientific and cognitive approaches to risk to embrace broader questions about how risk becomes knowable within sociocultural contexts. Research has additionally tended to sideline questions of learning from these considerations, which limits understanding of how information literacy shapes how people use information to become informed about danger within their lives. This paper has critically interrogated assumptions within risk literature to propose a research agenda that explores the connections between risk, information and information literacy as well as to offer insight into directions that this scholarship might take. Studies that build upon these ideas will extend risk research by encompassing more complex questions related to how risk is brought into being, including how risk is constrained and enabled within socially situated information environments. They will also develop information literacy research by continuing to theorise sociological lines of scholarship as well as integrating richer questions related to work, power and agency into practice. The influence of risk continues to grow within contemporary society, and it is important that the understandings of information that underpin this work are robust enough to meet future challenges.

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