informationresearch

VOL. 25 NO. 4, DECEMBER, 2020

Proceedings of ISIC: the information behaviour conference, Pretoria, South Africa, 28th September to 1st October, 2020.

Information-making-related information needs and the credibility of information

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Introduction. *Even if trust in the process of how information is made has been acknowledged as a key aspect of the credibility of information, there is little earlier research on how and if people use or want information on information making when doing credibility assessments.*
Method. *Swedish archaeology administrators were interviewed (n=10).*
Analysis. *Interview transcripts were analysed using close reading and an approach based on the constant comparative method. Information needs relating to work processes, methods and technologies, context and situation and non-needs (i.e. lack of need) of information on information making were identified similarly to two types of reputational and four types of non-reputational cues of how information was made.*
Results. *Experienced information needs about information making and preferences for reputational and non-reputational cues in credibility assessments were related to individuals' epistemic distance to the context where information making took place, and if the interviewees positioned themselves as insiders or outsiders in that particular context.*
Conclusion. *To understand the dynamics and interaction of credibility criteria, it can be useful to look at how and what they are used to justify and what are people's underpinning epistemic beliefs, instead of merely pointing to the differences in beliefs and enumerating situation-specific credibility criteria. People's flexibility in switching between reputational and non-reputational cues, and positioning themselves as insiders and outsiders, could be seen as an opportunity rather than as a sign of their inferior informational competences.*

DOI: https://doi.org/10.47989/irisic2002

Introduction

The influence of assumptions and knowledge of the origins of information has been acknowledged in the literature (e.g., Francke and Sundin, 2012; ACRL, 2015; Kern and Hienert, 2018) but in comparison to many other cues people use to assess the credibility of information, there is little systematic research on the perceived needs and usefulness of knowing how information was created or made. Similarly to credibility judgments in general, it is conceivable that with assessments based on information-making-related information, a key question is to understand when people experience a need for reputational and non-reputational cues, and the choice between relying on one of the two in different situations (*cf.*, Taraborelli, 2008).

Based on an assumption that epistemic beliefs guide the choice of epistemic justifications used in credibility assessments, the aim of this paper is to explore the mechanisms underpinning (1) information-making-related information needs (RQ1) and the (2) dynamics of non-reputational and reputational cues and justifications in credibility assessments (RQ2).

The study builds on an empirical investigation of archaeological heritage administrators' perceptions of the assessment of the credibility of field documentation and field archaeologists' information work. In contrast to typical contexts of seeking existing information, this particular empirical case allows us to investigate participants' experiences of assessing on-going information production and consequently, their preference for (primarily non-reputational) first-hand, and (often reputational) second-hand cues (*cf.*, Wilson, 1983) when both are available.

Literature review

Credibility assessment

In broad terms, the criteria for assessing credibility can be divided (Taraborelli, 2008) into reputational, that is what can be said *about* information e.g. credibility of information source (De Sordi et al., 2014), media and cognitive authorities (Savolainen, 2007, Wilson, 1983), producers of information (Miller, 2015; McKnight et al., 2002), and non-reputational, that is, what can be said *of* information e.g. its perceived accuracy (Savolainen, 2011), currency, fairness, impartiality (Rieh and Danielson, 2007). Pertinent factors are also its specificity, topicality, familiarity, variety, accessibility, affectiveness, reliability, usability and usefulness, importance, language, novelty, clarity, security and validity (Liu, 2004; Savolainen and Kari, 2006; Savolainen, 2011) in a given situation and how it is related to information users' personal curiosity (Savolainen and Kari, 2006). In addition to investigating criteria, a large number of studies have focussed on explicating strategies used to assess the credibility of information (e.g. Fogg, 2003; Metzger and Flanagin, 2007; Hilligoss and Rieh, 2008; Madden et al., 2012; Metzger and Flanagin, 2013).

Earlier research points to the complexity and contextuality of how credibility is enacted based on personal knowledge and experience (Rieh, 2010). In the contemporary information landscape, instead of becoming more comprehensive, turning from authorities to reliability (Lankes, 2008) or showing interest in learning in depth how information technologies and infrastructures (*cf.*, Haider and Sundin, 2019) or knowing works (Mason et al., 2011), there is a lot of evidence that people tend to stick to using and repurposing old (quasi-) formal and cognitive authorities (Wilson, 1983), heuristics and shortcuts to assess information in novel contexts and ontological categories (Wang et al., 2019) and to a certain extent, develop new ones (Metzger et al., 2010) to navigate through the abundance of information.

The extensive use of heuristics and shortcuts applies both to experts and non-experts (Lucassen and Schraagen, 2011). Instead of finding significant differences in the comprehensiveness of credibility assessments between the two groups, experts have been found to be better in distinguishing relevant and irrelevant information than non-experts (Miller, 2014). They are also more prone to reject true information as false whereas non- experts have a tendency to do the opposite (Tseng and Fogg, 1999; Miller, 2014). The preference for particular cues varies depending on personal (professional or non-professional) subject and technological expertise (Gao et al., 2015), familiarity with information sources and platforms (Van Der Heide and Lim, 2016; Francke and Sundin, 2010) and their features (Kim, 2010; Jeon and Rieh, 2014). Similar factors, including affect (Lloyd, 2004) and reputation (Jamali et al., 2014), underpin epistemic justifications in both professional and non-professional contexts even if the specific criteria of profession-related credibility judgements would be primarily, albeit not exclusively, based on professional rather than personal premises (Kostagiolas et al., 2014). Further, the type (e.g. known authorities, independent information providers and aggregators of information sources as in Chung et al., 2012) and kind of information (e.g. factual or subjective/opinions, Metzger et al., 2010; Sundin and Francke, 2009) and information source (e.g. expertise or official status of sources Rieh et al., 2010; Syn and Kim, 2013) under evaluation influence the choice similarly to when, where (e.g. depending on situation as in Huvila, 2013, or social as in Gasser et al., 2012, or cultural context as in Yi et al., 2012) and for what purpose (Rieh et al., 2010) something is measured.

Credibility and process-related information needs

Even if the importance of understanding practices, rigour and time invested in information creation has been underlined as a premise of assessing the credibility of information (McDowell, 2002; Fallis, 2008), especially in educational (e.g. Swanson, 2005; Grafstein, 2017) and scholarly contexts (e.g., Kern and Hienert, 2018) – and included in the 2015 ACRL *Framework for Information Literacy for Higher Education* – there are conspicuously few direct references to information making processes in earlier empirical credibility research.

This does not mean that information making or other information processes like seeking, sharing and mediation, would not underpin different criteria used to assess various aspects of credibility (e.g. Rieh and Belkin, 2000; Savolainen, 2007; Rieh and Hilligoss, 2007; Savolainen, 2011). Direct references to assumptions or knowledge about the process of information making have been uncommon in earlier studies. This seems to apply especially to information making (*cf.*, e.g. for studies of information makers, e.g. Van House, 2002; Mason and Boldrin, 2008; Rieh, 2010) even if the general interest in information making (or creation) as a distinct information activity has been growing steadily during the last couple of decades (Gorichanaz, 2019; Huvila, 2011; Trace, 2007). This study refers to the activity of how information is brought into existence by using the term *information making* (Huvila, 2018), to underline the temporal aspect of how information is both made and in making, rather than to turn to such comparable and (quasi-)synonymous terms as information creation, or information or knowledge production, with somewhat different connotations and references, respectively to creation and creativity, or production and products. Similarly, to some other types of information needs, the direct need of understanding processes in the context of credibility assessment has tended to remain unexpressed (*cf.* Mniszak et al., 2020) or unarticulated.

There are, however, exceptions. Some earlier studies have highlighted how information seekers use their knowledge, assumptions and experiences of search processes and searching (Hargittai et al., 2010; Huvila, 2013), editorial (Goldman, 2010), and information mediation processes (Yang and Rieh, 2013), and how and where retrieved information was acquired (e.g., Rieh and Belkin, 2000), to assess its credibility. With known information sources (e.g. Wikipedia or scholarly information), assumptions and knowledge of how information is produced have been observed to influence credibility assessments (Francke and Sundin, 2012; Goldman, 2010; Cash et al., 2002), even if, for instance, in the Woxland et al. (2017) study, the student participants had difficulties articulating and identifying aspects of the information creation process pertinent to the credibility of news videos.

The findings of Mansour and Francke (2017) of the similarity of lifestyles as a cue for assessing the credibility of information in social media, suggest the importance of familiarity of the processes within which information emanates. Jamali et al. (2014) found that the researchers who are in the centre of their field are more likely to value process related (e.g. peer-review, data, argumentation) credibility cues than authority and reputation. The perceived greater usefulness and authority of contextually close and personally shared information, rather than codified information in information and knowledge management (Thompson and Walsham, 2004; Hertzum, 2002; Van House, 2002) and information sharing (e.g. Du et al., 2013) literature point similarly to the higher credibility of information known or assumed to have local, familiar and epistemically similar roots. In contrast, moving from a community to another can decrease the perceived credibility of information and increase the effort needed to establish it (Van House, 2002). There is evidence that the same could apply to assessments within disparate communities. Fry and Talja (2004) suggest, based on Whitley (1984), that the degree of the predictability, visibility and clarity of task outcomes and research processes (described as *task uncertainty*) in relation to general goals in scholarly disciplines, affect knowledge of work procedures, problem definitions and theoretical goals of scholarly work. The observations of Rieh et al. (2010) that credibility assessments of factual information lead to fewer credibility interactions than with exploratory information suggests the same and could indicate that a higher perceived ambiguity of information decreases its perceived credibility and can lead to an articulation of an expressed (*cf.*, Mniszak et al., 2020) information need. In Wersig's (1973) terms, it is, however, unclear to what extent these particular needs are *subjective* (what people think they need), *objective* (factual needs people can become aware of), and/or *potential* (needs people can become aware of), and to what extent the same need to establish the credibility of information can be satisfied by other means.

Theoretical considerations

As outcomes of epistemic practices (Choo, 2007) taking places within epistemic communities (Haas, 1992), the criteria of good and credible information are (similarly to interpreting information in general) epistemic questions (*cf.* Hjørland, 2002). As such, they are conditional on epistemic beliefs and justifications. In a non-objectivist (*cf.* Alston, 1989) sense of epistemic pluralism (Coliva and Pedersen, 2017), credibility assessment is about valuing *epistemic justifications* (Kelly, 2019) of the *goodness* of that activity. In a somewhat rough sense, according to a division of accounts of epistemological justification, reputation-based justifications of credibility can be described as primarily *coherentist* (Kelly, 2019; Moser, 1985) because they rely on the credibility of other beliefs within a particular epistemic system of beliefs. Similarly, non-reputational justifications can be described as primarily *foundationalist* (or, quasi-foundationalist as they are seldom foundationalist in a strong meaning) in the sense that they are often based on an assumption that the information *is* credible according to a criterion, presumed to be (at least close to) an objective fact, rather than a belief (Kelly, 2019; Moser, 1985).

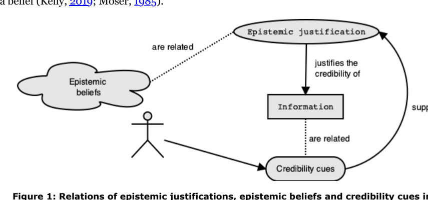

Figure 1: Relations of epistemic justifications, epistemic beliefs and credibility cues in the making of the credibility of information

While the credibility of someone or something (e.g. information or person) can be framed as a question of epistemic justifications, the articulated and unarticulated needs of information about *information making* for credibility evaluation can be traced back to *epistemic beliefs* (Kelly, 2019) of the legitimacy (and to an explicit *information need*) of particular *cues* to support specific epistemic justifications (visualised in Fig. 1). Some of these cues are reputational, some non-reputational. The discussion of epistemological justification in the context of information science and behaviour research has been somewhat sporadic (see e.g. Kelly, 2019; Choo, 2007; Martínez-Ávila and Budd, 2017) and the question of justification has been treated often in terms of subjective rationale rather than as a true warrant (e.g. Martínez-Ávila and Budd, 2017; Matthews, 2015). In contrast to the earlier tendencies to investigate epistemic beliefs as direct antecedents of how information is assessed, valued and acted upon (Huvila, 2015; Kelly, 2019; Ståhl, 2019;), this study is consciously taking a step back and unpacking epistemic justifications and their underpinning epistemic beliefs to understand how assumptions of the appropriateness, choice and perceived need of particular credibility cues are related to each other.

Methods and material

Swedish archaeology administrators were interviewed (n=10) following the thematic interview approach of Hirsjärvi and Hurme (2008). All interviews (average length 60 min) – focussing on the interviewees' views on the current state and future prospects of their work, and documentation and management of archaeological heritage and information in Sweden – were conducted by the author, taped, and transcribed. All interviewees are educated as archaeologists and had earlier working experience in development-led field archaeology.

They represent a convenience sample of administrators with varying geographic location, gender, and length of professional experience. For reporting purposes, they were assigned pseudonyms (Lykinos, Kalypso, Ktesias, Faidon, Thalassopot, Hyakinthos, Penelope, Helena, Kinyras and Nauplios).

The author analysed the interview data based on close reading (DuBois, 2003) of the transcripts using an approach based on the constant comparative method (Glaser and Strauss, 1967). The analysis followed an iterative process of categorising, writing, and recategorising the transcripts and identifying potential expressions representing the interviewees' need to know (i.e., information needs) how the archaeological information they were using had been made (information making) and what types of cues they used to assess the credibility of that process. In order to control for an over-expression of individual opinions, the analysis placed special emphasis on views expressed by multiple interviewees. The results were revisited after one month of the initial analysis using negative case analysis (Lincoln and Guba, 1985) with the specific purpose of finding contradictory evidence that would decrease the reliability of the conclusions.

Background: archaeological heritage administrators and their information work

The majority of all archaeological fieldwork in Sweden is conducted in the context of contracted, often rescue and development-related archaeology projects. Apart from traditional excavations and rescue work, Swedish archaeology contractors are involved in many other types of archaeological work (Söderström, 2018). A typical process involves both private and public actors of which the most prominent ones are the developer (often state agencies, construction companies and landowners), county administrative board and the contractor together with the Swedish National Heritage Board, the national regulatory authority (RAÄ, 2015). The general requirement is that a developer files an environmental impact assessment of a planned intervention (Schibbye et al., 2007) that includes an analysis of its impact on eventual archaeological sites in the area. It is common that the environmental impact assessment is preceded by a pre-study, which is generally contracted to an external archaeology consultant. If the conclusion is that archaeological sites need to be either fully or partially removed, the county administrative board puts an investigation project out to tender. Contractors are asked to submit an investigation plan and budget for the project, including a specification of the type of and schedule for reporting (Huvila, 2016).

The tenders are processed by the county administrative board and discussed with the developer before a final decision. After a decision, the chosen contractor conducts an archaeological investigation on the site. When the investigation is completed, the contractor is expected to file a report with the county administrative board with specific information indicated in the contract documents. At the end of the process, the county administrative board reviews the report before formally closing the case. Specific procedures exist for processing any physical finds retrieved during the investigation, and filing information in the national sites and monuments registry (RAÄ, 2015).

Analysis

The interviewees were largely content with the archaeological documentation they received from the contractors. It was considered to be credible (e.g., Kalypso, Ktesias, Faidon, Penelope, Helena, Nauplios) and significant differences between individual actors were few (e.g., Kalypso, Ktesias, Nauplios). Many interviewees did, however, complain that they had no time to assess all information and its credibility in detail (e.g., Kalypso, Faidon, Thalassopot). Because of the lack of time and the difficulty to act simultaneously as an evaluator and administrator of a project, multiple interviewees would have appreciated an additional level of quality control before the documentation was archived (e.g., Faidon, Penelope).

Information needs and information making

The principal concern of administrators is to procure a professional and reliable contractor to conduct a survey that gives the necessary information to either plan future land-use (pre- investigation) or to document an archaeological site that needs to be removed (full investigation). The interviewees focused often on what *material* (Faidon) the contractors provided them and that they received a formally correct set of documents (Kalypso) rather than explicating in detail what specific pieces of information they were expecting (e.g., Kalypso, Faidon, Thalassopot), or how that *material* was supposed to be made. One of the interviewees with earlier experience of working in multiple European countries criticised that in Sweden, there is a tendency to be both unspecific and highly selective about what should be documented and how. However, even if knowing details was not prioritised, general knowledge of how field-archaeologists make information was deemed crucial. It was considered important for assessing and interpreting the results of their work, being able to direct them to produce relevant information about sites, and understanding what is possible and financially viable to achieve in an investigation (Lykinos, Faidon, Penelope, Helena).

Even if the interviewees expressed only to a limited extent explicit (information) needs relating to how archaeological information was made, they described several information needs relating to various aspects of an investigation that helped them to assess whether it and its results were credible and adequate. A summary of these information needs discussed further down in the section is provided in Table 1.

Information need	Mentioned by
Work process	Lykinos, Faidon, Penelope, Kalypso, Helena, Ktesias, Penelope
Methods and technologies	Kalypso, Helena, Nauplios, Ktesias, Faidon, Hyakinthos, Penelope, Helena, Kinyras
Context and situation of information making	Thalassopot, Helena, Lykinos
Non-needs	Lykinos, Nauplios, Kalypso, Helena

Table 1: Information needs about information making

Work process

Within the limits of time and possibilities, the interviewees tried to follow up investigation processes even if, as Ktesias admitted, for someone who has not been on the site doing the actual work, it was impossible to know how meticulous the contractor has been and what was really done in practice. Some of the interviewees (e.g., Faidon, Penelope) who had less workload and a possibility to focus on individual projects (e.g., Kalypso, Helena) said that they could follow and steer contractors in more detail by, for instance, shepherding report- writing and doing spot tests. However, even when close follow-up was referred to as an ideal, it was not done in practice. Even those interviewees who had an opportunity to trail individual investigations in detail like Lykinos, seemed to consider that discussing with contractors and occasionally visiting the sites was enough. Apart from following on-going investigations, the interviewees used proxy measures to determine whether contractors' work was credible.

In particular, timeliness (i.e. whether the work progressed according to the timetable, and if reports were filed in due order) (Lykinos, Kalypso, Ktesias, Penelope) functions as an important cue.

Methods and technologies

A few of the interviewees suggested that instead of following the actual work process in detail, knowing about (and if necessary, being able to influence) the methods the contractors are using is enough (Kalypso, Helena, Nauplios). Digitalisation and increased standardisation of working methods, processes and information infrastructures (Ktesias, Faidon, Hyakinthos, Penelope, Helena, Kinyras), and merely the use of *appropriate* widely- used documentation methods were considered to lead to credible and high-quality documentation (Kalypso, Nauplios). Further, it appeared that the use of contemporary techniques and technologies mean that information becomes almost by default '*as good as it can be*' (Kalypso).

Context and situation of information making

The interviewees referred also to the impact of the context and situation of information making as antecedents of its credibility. Sometimes, sub-optimal quality does not depend on contractors but on, for instance, bad weather or low visibility, at the site of investigation (Thalassopot, Helena). Helena noted, laughing, that if investigations are conducted in wintertime, the results will be bad almost by default. A related issue raised by Lykinos was the importance of the contractors' knowledge of different types of archaeological sites, local (pre-)history and conditions of fieldwork. He described how a specialist had once remarked on the basis of a written report that the interpretation of a specific site was incorrect – which turned out to be the case in a later investigation.

Non-needs

There are also cases when the interviewees did not need to know how information was made to determine its credibility. If a contractor is experienced and has a history of delivering good quality documentation, there is seldom a reason to question her judgment (Lykinos, Nauplios). Kalypso and Helena remarked that it is not only beyond their capabilities, but also not a part of their job to go into detail and examine the quality and relevance of minuscule details of the documentation and how it was made. In spite of this, Helena was still confident that she knows what is going on. Administrators should not determine or ask

> *what [contractors] have measured, why [they] have measured that and so on. It's not, we don't go to that level and I don't think we should either because the archaeologists are that much ahead of us in the development [of methods and field practice (Kalypso).*

Reputational and non-reputational cues of credibility

Even if the interviewees considered that the quality and credibility of archaeological field documentation was high, they acknowledged that the understanding of what is credible varies between institutions and individuals. They referred to a number of different reputational and non-reputational criteria (*cf.*, Taraborelli, 2008) for assessing the quality and credibility of documentation and adequate procedures but would also have welcomed clearer guidelines from the national authorities (e.g. Faidon) to complement the existing legislation and guidelines (RAÄ, 2015). A summary of the cues is presented in Table 2.

Cue	Mentioned by
Reputational	
Credibility by default	Lykinos, Kalypso, Ktesias, Faidon, Penelope, Helena
Reputation and earlier results	Lykinos, Kalypso, Ktesias, Faidon, Penelope, Helena, Nauplios
Non-reputational	
Primary information	Ktesias, Thalassopot, Lykinos, Faidon, Penelope, Ktesias
Secondary information	Lykinos, Thalassopot, Hyakinthos, Kinyras, Ktesias, Nauplios, Kalypso, Penelope
Products	Faidon, Hyakinthos, Kalypso, Nauplios, Penelope, Lykinos, Ktesias
Participation	Lykinos, Faidon, Penelope, Thalassopot, Helena, Kinyras

Table 2: Reputational and non-reputational cues of credibility

Reputational cues

Credibility by default

A largely implicit reputational criterion was an assumption that information and the procedures of work of the contractors are credible and of high quality by default (compared to the non-need of information discussed above). Multiple interviewees reacted spontaneously to a question of how they assessed credibility by stating that contractors and their results are credible (e.g., Lykinos, Kalypso, Ktesias, Faidon, Penelope, Helena). Penelope added that her premise is that all archaeologists are very engaged in what they are doing and if someone is not, it shows in the documentation. A factor that can explain the prevalence of this view is that in many parts of Sweden, the contract archaeology market is dominated by a small number of primarily local actors (e.g., Lykinos, Kalypso, Thalassopot). Administrators know the most of the contractors and are familiar with their work.

Reputation and earlier results

The implicit assumptions of the credibility of fellow archaeologists' work were complemented by explicit references to the quality of the earlier work of specific contractors. Most of the interviewees, including Lykinos, Kalypso, Ktesias, Faidon, Penelope, Helena and Nauplios, emphasised directly that they trusted the contractors. Ktesias explained that when assessing a particular piece of documentation, he checks who has done the work. If the contractors are experienced and have a history of delivering good quality documentation, there is seldom a reason to question their judgment (Lykinos, Nauplios).

Non-reputational cues

Primary information

In addition to reputational criteria, the interviewees engaged in different ways with the documentation to assess its quality. Partly, they relied on reading, checking and evaluating the information they receive directly from the contractors. The first assessment could be based on judging the type of information and estimating if it *sounds credible* (Ktesias) or if it feels right (Thalassopot) considering what the interviewee knew about the site and project. '*[Y]ou are pretty used to reading reports, so that often you can see if the argumentation makes sense and so on, and if they have been careful in taking their notes*' (Lykinos). Some of the interviewees (e.g. Faidon, Penelope) – as it seems, often with less workload (e.g., Kalypso, Helena) – suggested that they do spot tests. Also, the lack of explicitly stated grounds for an interpretation or something that deviates from earlier evidence can raise questions of the accuracy and credibility of documentation (Ktesias). A factor that generally seemed to affect mostly the completeness of documentation rather than its credibility was that in some cases, the contractors might have reasons to withhold information. If a pre-investigation of an archaeological site would point to a need of a full excavation at the site, a report would need to be detailed enough to help both the pre-investigator and other contractors to submit a tender for the excavation. However, from the perspective of the contractor that was responsible for the pre-investigation, the report should not be too detailed to help others to win the tender of a following full investigation (Faidon).

Secondary information

The interviewees could also rely on secondary information on the documentation and documentation work, especially if the initial assessment left some questions open.

Long work experience and local knowledge tended to be the most important and frequently used points of comparison (Lykinos, Thalassopot, Hyakinthos, Kinyras). '*[I]t is the experience; end of discussion!*' (Hyakinthos). In addition, for instance, knowledge of methods, specific types of sites and local archaeology, comparisons with historical maps, place name registry and local geology (Ktesias, Nauplios, Kalypso) could provide a useful point of reference. Sometimes, especially with very specific questions relating to particular types of remains or historical periods, there can be different scholarly opinions on how documentation and interpretations should be done. In such cases, it can be difficult for a non- specialist to determine whether the chosen approach was good or bad (Penelope), and instead, better to have an expert to consult.

Products

The interviewees assessed the credibility of contractors' work by looking at its digital and non-digital outcomes. Appropriate file formats (Faidon, Hyakinthos), references (Kalypso, Nauplios), accurate height data (Nauplios), structure of documentation that helps to understand the context and relations of observations (Penelope), presence of specific types of illustrations (e.g., cross-sections, Penelope), and that a report is complete and completed in time (Lykinos, Kalypso, Ktesias) were mentioned as criteria for assessing credibility and good quality.

Apart from its external characteristics, the interviewees could also assess the credibility of documentation by considering how well the information answered the questions posed in the contract documents (Faidon) and whether it would allow archaeologists to '*recreate the investigated site*' (i.e., how the site looked like in the past and when investigated) on the basis of the documentation (Nauplios).

Participation

In some cases, the interviewees (e.g., Lykinos, Faidon, Penelope) – again primarily those with less workload (e.g., Kalypso, Helena) – explained that they used to discuss regularly with the contractors (e.g., Lykinos, Thalassopot, Helena, Kinyras), visit sites (e.g., Lykinos, Thalassopot) and coordinate both on-going work and report-writing. Another form of indirect participation mentioned was to write as clear and explicit directions for the fieldwork as possible (e.g., Faidon).

Discussion

The analysis suggests that even if the interviewees did apparently consider that the process of how the archaeology contractors produced and made information is crucial to the credibility of that work and its results, (RQ1) their direct need for information on information making were limited, indirect and often unarticulated. The finding is similar to earlier studies in other contexts (e.g., Mason et al., 2011; Mniszak et al., 2020). In Wersig's (1973) straightforward typology of information needs, the interviewees had both subjective and factual needs of knowing about information making and unarticulated potential needs they could become aware of depending on the situation- in-hand. It seems that credibility is '*often assessed by 'proxy''* (Cash et al., 2002, p. 4-5), also in the context of information making. Even if the possibility to follow on-going projects in detail was presented as an ideal, the interviewees tended to deem it unnecessary if their administrative or archaeological expertise did not suggest that they needed to react. At the same time, however, the findings suggest that the interviewees had an indirect need *to be able to know* about how the contractor made the information if that would be necessary. Further, when the interviewees had an opportunity and personal interest (e.g., Lykinos, Helena) to properly engage in the process, they might do so to be able to draw their own conclusions.

Regarding (RQ2), the relation of non-reputational and reputational information on information making in credibility assessments, the findings suggest that similarly to information searching in general, the initial credibility judgments were based on relatively simple, often reputational, cues. If considered necessary, additional evaluation continued with more in- depth inquiry into non-reputational cues. Consistent with Foster (2009), the perceived need to doubt and strategies to assess credibility varied from one situation and task to another. In this sense, the interviewees' strategies were similar to how credibility assessment processes have been described in earlier studies (e.g., Wathen and Burkell, 2002; Rieh and Belkin, 2000). The categories of reputational and non-reputational cues identified in the analysis correspond with earlier classifications (e.g. Rieh and Belkin, 2000; Taraborelli, 2008).

Beyond the relatively simple observations presented above, the present study provides keys to elaborate both the question of information needs and the interplay of reputational and non- reputational cues – even if it is necessary to consider its limitations. Most importantly, the findings from an empirical study with a specific professional group and a small sample are not by default representative of other populations, contexts and situations. In particular, the level of insight in the specific information making processes varied among the interviewees, in comparison to many colloquial contexts of information use they all were closer to being experts than novices in archaeological information making. However, considering the exploratory aims of this study to provide analytical insights into credibility assessment related information needs and mechanisms of using reputational and non-reputational cues to assess the credibility of information making rather than identifying general patterns of behaviour in the general population, it is unlikely to lead to a major bias.

The interviews support the earlier observations that instead of being an impersonal domain- independent attribute (Rieh, 2010), credibility is enacted and assessed within bounded communities (e.g., Cash et al., 2002; Van House, 2002), or using Chatman's (1991) term, small worlds (Savolainen, 2007), where members share both context (such as knowledge of local archaeology, or experience of working in contract archaeology), but even more importantly, epistemological assumptions (Hjørland, 2002) and limits or boundaries of what is knowable (Huvila, 2012). For the interviewees, the central premises of determining whether information and how it was made could be deemed credible or not was a shared understanding of how particular methods and techniques imply certain outcomes and of what kind of data and structure in documentation is a prerequisite of being able to know how a particular site looked. Instead of being related to archaeological or broader major *epistemological* paradigms (*cf.*, Trigger, 2006; Hjørland, 2002; Baert, 2005), the differences are easier to trace back to the contextual and situational *epistemic* goodness of particular actions and things. The variety of information needs, epistemic cues and justifications described by individual interviewees suggest that they act according to a parallel insider- and outsider-ship in a large number of overlapping smaller and larger epistemic communities of expertise within the, by itself, small community of Swedish contract archaeologists and heritage administrators. Each of these communities is characterised by its particular genres (Huvila, 2019; Andersen, 2017) stemming from such constituents as their characteristic working methods, archaeological periods, and types and contexts of the sites of their interest.

Even if there was some evidence that confirms earlier observations of the greater importance of generic reputational cues (e.g., known reputation, assumed credibility) for those acting as outsiders (*cf.*, Jamali et al., 2014), it was also apparent that they are not necessarily less important for insiders. The cues are merely read in a different manner. The insiders are *privileged* (Taraborelli, 2008) in that they know how to interpret both types of cues and use them together to form a coherent system of justifications. Reputational cues about, for example, the expertise of individual contractors could function as shortcuts that reduced the need to engage in time-consuming inspection of non-reputational evidence (e.g., documentation), or as traces that can be read in parallel to confirm or dispute the reputation of information creator. Insiders' awareness of these links, and on a more profound level, of the congruence of their epistemic beliefs and justifications in the specific contexts of their work, was central to their ability to trust information with minimal effort. In terms of Wersig's classification of information needs, they had a higher overlap between their subjective, factual and potential information needs (*cf.*, Wersig, 1973). This explains why they were '*so efficient, so able to make decisions, usually the correct one, quickly and without fuss*' (Cole, 2018).

In contrast to insiders, when the interviewees assessed credibility as outsiders, the links between reputational and non-reputational information were weaker and sometimes the entire process could be seen as a '*ritual of verification*' (Moss, 2011) based on reputational use of non-reputational information. Objectified assumptions (e.g., that the presence of certain type

of data verified the credibility of the information making process) could provide a shortcut if the discrepancy between epistemic beliefs and possibilities to find appropriate justifications was perceived as too great. The links between reputation and its underpinnings were weaker and scarcer. In such cases the interviewees were more prone to trust that a contractor was credible and that established and familiar methods and techniques ensure trustworthy results than to follow-up investigation processes or examine documentation in detail. Their reliance on the presence of evidence (cf., Yang et al., 2013) and verifiability (cf., Sahut, 2014; Hansen et al., 2009) is consistent with parallel contexts where credibility is assessed by outsiders, including collective knowledge production and non-experts' information searching.

Instead being a question of landing within or outside of a quasi-physical boundary, acting as an insider or outsider seemed to be closer to a matter of assuming a perspective in relation to a specific community depending on how far, in epistemic terms, an individual is considered to be from its core. The span of this separation can be called *epistemic distance*. Epistemic distance does not refer to differences in scientific views or epistemological perspectives (e.g., positivism versus constructivism) but rather to the distance from being a complete insider. Remaining as an outsider and interpreting non-reputational information as reputational second-hand knowledge (e.g., timeliness of contractors' work and the completeness of the documentation) could be intentional. It might, for instance, help to save time or prioritise tasks (e.g., Kalypso and Helena versus Faidon and Penelope). However, as the tension overseeing and administering contractors' work demonstrates, taking such shortcuts was not always that straightforward. The aspiration of several interviewees to have someone (i.e., outsider) to approve the credibility of incoming documentation before it was archived or used (e.g., Faidon, Penelope) shows how difficult it could be to assume an outsider position when the epistemic distance is short.

On the basis of these findings it seems that whereas outsiders' potential need for information (*cf.*, Wersig, 1973) on information making can be more substantial than insiders', they were less likely to be capable of exploiting it effectively in credibility assessment. Even if outsiders can change their credibility perceptions on the basis of non-reputational insights provided through information on editorial activity (Goldman, 2010), improved accountability of information creation, boundary objects, participatory practices, mediation, translation and coordination (Cash et al., 2002), a question remains to what extent the non-reputational insights in an original context can be used in non-reputational terms by outsiders within their particular contexts and situations. The present findings suggest that in the interviewees' work, non-reputational cues required participation and inside knowledge of either specific information making process or the local context even more than the use of reputational cues (*cf.*, Taraborelli, 2008). Therefore, even if suggestions to increase the transparency of information by providing tools (Flanagin and Metzger, 2008) and process-related information (Goldman, 2010) are pertinent, it is likely that they are usable mainly for insiders. However, because insiders are not necessarily in grave need of such additional information, there is a risk that it ends up being used by outsiders as a new genre of reputational information rather than as means to provide genuine insights in to the process of information making.

Further, even if efforts are successful, another problem is the high cost of using non-reputational cues (*cf.*, Taraborelli, 2008), especially if the user remains an outsider and lacks insider competence to complement the cues with an in-depth understanding of the studied context.

In spite of the difficulties related to shortening epistemic distance for outsiders, there is undoubtedly room for a greater awareness of the functioning of the key information infrastructures (*cf.*, Haider and Sundin, 2019) and knowing how information should be made and organised (*cf.* Huvila, 2011). In some cases, it could similarly be useful to try to make the difficulty of finding relevant information more obvious (Huvila, 2012) and to increase outsiders' burden of knowing about the making and origins of information. There are, however, limits to the number of communities where an individual can be an insider and how long epistemic distances permit insidership. Professional and non- professional experts like archaeology administrators (in this study), scholars (in Rieh and Belkin, 2000), Wikipedia editors (in Francke and Sundin, 2010) or mothers (in Mansour and Francke, 2017) have perhaps enough resources to act as insiders in their specific small fields of expertise but when the epistemic distance between information making and taking (Huvila, 2018) grows due to the complexity of the field (*cf.*, Fry and Talja, 2004) or other factors, information making is no longer knowable and the possibilities to position oneself as an insider (*cf.*, Thompson and Walsham, 2004) erode.

Conclusions

The findings suggest that (RQ1) experienced need for information on information making in credibility assessments can be explained by the *epistemic distance* to the context where information making took place and whether the administrators positioned themselves as insiders or outsiders in that particular context. Outsiders tended to have a more substantial *potential need* for information (*cf.*, Wersig, 1973) on information making to make the sought information actionable, whereas their lack of insights in the '*continuum of information making and taking*' (Huvila, 2018) in their particular contexts meant that they were less likely to experience a *subjective need* (*cf.*, Wersig, 1973) for that information and to be able to exploit it. The preference for reputational versus non-reputational cues (RQ2) depend on individuals' (epistemic) beliefs about their appropriateness to justify (provide an epistemic justification) the credibility of information.

On a more general level, the findings suggest that to understand the reciprocal dynamics and interaction of credibility criteria, it is useful to look at how and what they are used to justify, and to uncover their underpinning epistemic beliefs instead of merely pointing to the differences in beliefs and trying to enumerate credibility criteria in specific situations. Insider- or outsidership or increasing the epistemic distance from the making of information did not necessarily alter the overall epistemic beliefs of the study participants (what is necessary to know about information making to say if information is credible), but influenced their epistemic justifications (what and what kind of information is enough to justify something as credible). Insiders were, knowing the premises of how information is made, inclined to act on a coherentist basis and to justify their credibility assessments by referring to first-hand experiences and beliefs of the reliability of different information makers. In contrast, the outsiders' distance and exteriority to a useful and coherent system of beliefs to rely on, prompted them to act in a quasi-foundationalist manner and rely on formal non-reputational criteria like the presence of specific type of data or comparative evidence they were familiar with in other contexts relating to their work where they positioned themselves as insiders. Because acting as an insider or outsider was also a matter of choice, and there are limits to how often an individual can afford to be an insider, a blanket solution to helping everyone is unlikely to cut epistemic distance by making everyone an insider. Rather than forcing everyone to know a lot about how every tiny piece of information has been made, there is an urgent need for strategies to exploit both reputational and non-reputational cues and people's flexibility in acting as experts and non-experts.

Acknowledgements

This work has received funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme grant agreement No 818210 as a part of the project CApturing Paradata for documenTing data creation and Use for the REsearch of the future (CAPTURE). The work has also benefited of the discussions at different events organised by the COST Action ARKWORK, supported by COST (European Cooperation in Science and Technology). The author would also like to express his gratitude to all the participants of the interview study.

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References

ACRL. (2015). *Framework for information literacy for higher education*. http://www.ala.org/acrl/standards/ilframework (Archived by WebCite® at https://www.webcitation.org/6bllz3bzr)

Alston, W.P. (1989). *Epistemic justification: essays in the theory of knowledge*. Cornell University Press.

Andersen, J. (2017). Genre, the organization of knowledge and everyday life. *Information Research*, *22*(1), paper 1647. http://www.informationr.net/ir/22-1/colis/colis1647.html (Archived by WebCite® at https://www.webcitation.org/6oJgtXunh)

Baert, P. (2005). *Philosophy of the social sciences: towards pragmatism*. Polity Press.

Cash, D., Clark, W., Alcock, F., Dickson, N., Eckley, N. & Jäger, J. (2002). *Salience, credibility, legitimacy and boundaries: linking research, assessment and decision making*. SSRN. http://dx.doi.org/10.2139/ssrn.372280

Chatman, E.A. (1991). Life in a small world: applicability of gratification theory to information- seeking behavior. *Journal of the American Association for Information Science and technology*, *42*(6), 438-449. http://dx.doi.org/10.1002/(SICI)1097-4571(199107)42:6%3C438::AID-ASI6%3E3.0.CO;2-B

Choo, C.W. (2007). Information seeking in organizations: epistemic contexts and contests. *Information Research*, *12*(2), paper 298. http://www.informationr.net/ir/12-2/paper298.html (Archived by the Internet Archive at https://web.archive.org/web/20200807183744/http://informationr.net/ir///12-2/paper298.html)

Chung, C.J., Nam, Y. & Stefanone, M.A. (2012). Exploring online news credibility: the relative influence of traditional and technological factors. *Journal of Computer-Mediated Communication*, *17*(2), 171-186. http://dx.doi.org/10.1111/j.1083-6101.2011.01565.x

Cole, C. (2018). *The consciousness' drive: information need and the search for meaning*. http://dx.doi.org/10.1007/978-3-319-92457-1

Coliva, A. & Pedersen, N.J.L.L. (2017). In A. Coliva & N.J.L.L. Pedersen (Eds.), *Epistemic pluralism* (pp. 1-19). Springer. http://dx.doi.org/10.1007/978-3-319-65460-7_1

De Sordi, J.O., Meireles, M. & de Azevedo M. (2014). Information selection by managers: priorities and values attributed to the dimensions of information. *Online Information Review*, *38*(5), 661-679. https://doi.org/10.1108/OIR-01-2014-0006

Du, J.T., Liu, Y-H., Zhu, Q. & Chen, Y. (2013). Modelling marketing professionals' information behaviour in the workplace: towards a holistic understanding. *Information Research*, *18*(1), paper 560. http://informationr.net/ir/18-1/paper560.html (Archived by WebCite® at https://www.webcitation.org/6KYo4OHMe)

DuBois, A. (2003). Close reading: an introduction. In F. Lentricchia & A. DuBois (Eds.), *Close reading: a reader* (pp. 1-40). Duke University Press.

Fallis, D. (2008). Toward an epistemology of Wikipedia. *Journal of the American Society for Information Science and Technology*, *59*(10), 1662-1674. http://dx.doi.org/10.1002/asi.20870

Flanagin, A.J. & Metzger, M.J. (2008). The credibility of volunteered geographic information. *GeoJournal*, *72*(3-4), 137-148. http://dx.doi.org/10.1007/s10708-008-9188-y

Fogg, B.J. (2003). Prominence-interpretation theory: explaining how people assess credibility online. In *CHI '03 extended abstracts on human factors in computing systems* (pp. 722- 723). ACM Press.

http://dx.doi.org/10.1145/965891.965951
Foster, J. (2009). Understanding interaction in information seeking and use as a discourse: a dialogic approach. *Journal of Documentation*, *65*(1), 83-105. http://dx.doi.org/10.1108/00220410910926130
Francke, H. & Sundin, O. (2010). An inside view: credibility in Wikipedia from the perspective of editors. In Proceedings of the Seventh International Conference on Conceptions of Library and Information Science - 'Unity in diversity'. *Information Research*, *15*(3), paper colis702. http://informationr.net/ir/15-3/colis7/colis702.html (Archived by Internet Archive at https://web.archive.org/web/20200807184809/http://informationr.net/ir///15-3/colis7/colis702.html)
Francke, H. & Sundin, O. (2012). Negotiating the role of sources: educators' conceptions of credibility in participatory media. *Library & Information Science Research*, *34*(3), 169-175. http://dx.doi.org/10.1016/j.lisr.2011.12.004
Fry, J. & Talja, S. (2004). The cultural shaping of scholarly communication: explaining e-journal use within and across academic fields. *Proceedings of the American Society for Information Science and Technology*, *41*(1), 20-30. http://dx.doi.org/10.1002/meet.1450410103
Gao, Q., Tian, Y. & Tu, M. (2015). Exploring factors influencing Chinese user's perceived credibility of health and safety information on Weibo. *Computers in Human Behavior*, *45*, 21-31. http://dx.doi.org/10.1016/j.chb.2014.11.071
Gasser, U., Cortesi, S.C, Malik, M. & Lee, A. (2012). *Youth and digital media: from credibility to information quality*. The Berkman Center for Internet & Society Research Publication Series. http://dx.doi.org/10.2139/ssrn.2005272
Glaser, B.G. & Strauss, A.L. (1967). *The discovery of grounded theory: strategies for qualitative research*. Aldine Publishing.
Goldman, J.L. (2010). *The cognitive authority of collective intelligence*. (Unpublished Ph.D. thesis). Drexel University, Philadelphia, Pennsylvania.
Gorichanaz, T. (2019). Information creation and models of information behavior: grounding synthesis and further research. *Journal of Librarianship and Information Science*, *51*(4), 998-1006. http://dx.doi.org/10.1177/0961000618769968
Grafstein, A. (2017). Information literacy and critical thinking: context and practice. In D. Sales & M. Pinto (Eds.), *Pathways into information literacy and communities of practice* (pp. 3-28). Chandos Publishing. http://dx.doi.org/10.1016/B978-0-08-100673-3.00001-9
Haas, P.M. (1992). Introduction: epistemic communities and international policy coordination. *International Organization*, *46*(1), 1-35. http://dx.doi.org/10.1017/S0020818300001442
Haider, J. & Sundin, O. (2019). *Invisible search and online search engines: the ubiquity of search in everyday life*. Routledge. http://dx.doi.org/10.4324/9780429448546
Hansen, S., Berente, N. & Lyytinen, K. (2009). Wikipedia, critical social theory, and the possibility of rational discourse. *The Information Society*, *25*(1), 38-59. http://dx.doi.org/10.1080/01972240802587162
Hargittai, E., Fullerton, L., Menchen-Trevino, E. & Thomas, K.Y. (2010). Trust online: young adults' evaluation of web content. *International Journal of Communication*, *4*, 468-494. http://ijoc.org/ojs/index.php/ijoc/article/view/616/423
Hertzum, M. (2002). The importance of trust in software engineers' assessment and choice of information sources. *Information and Organization*, *12*(1), 1-18. http://dx.doi.org/10.1016/S1471-7727(01)00007-9
Hilligoss, B. & Rieh, S.Y. (2008). Developing a unifying framework of credibility assessment: construct, heuristics, and interaction in context. *Information Processing & Management*, *44*(4), 1467-1484. http://dx.doi.org/10.1016/j.ipm.2007.10.001
Hirsjärvi, S. & Hurme, H. (2008). *Tutkimushaastattelu: teemahaastattelun teoria ja käytäntö*. Gaudeamus.
Hjørland, B. (2002). Epistemology and the socio-cognitive perspective in information science. *Journal of the American Society for Information Science and Technology*, *53*(4), 257-270. http://dx.doi.org/10.1002/asi.10042
Huvila, I. (2011). The complete information literacy? Unforgetting creation and organisation of information. *Journal of Librarianship and Information Science*, *43*(4), 237-245. http://dx.doi.org/10.1177/0961000611418812
Huvila, I. (2012). *Information services and digital literacy: in search of the boundaries of knowing*. Chandos Publishing. http://dx.doi.org/10.1016/B978-1-84334-683-8.50003-3
Huvila, I. (2013). In web search we trust? Articulation of the cognitive authorities of web searching. *Information Research*, *18*(1), paper 567. http://informationr.net/ir/18-1/paper567.html (Archived by the Internet Archive at https://web.archive.org/web/20220608221923/http://informationr.net/ir///18-1/paper567.html#.XzPt3EIm1N)
Huvila, I. (2015). The unbearable lightness of participating? Revisiting the discourses of ´participation´ in archival literature. *Journal of Documentation*, *71*(2), 358-386. http://dx.doi.org/10.1108/JD-01-2014-0012
Huvila, I. (2016). 'If we just knew who should do it', or the social organization of the archiving of archaeology in Sweden. *Information Research*, *21*(2), paper http://www.informationr.net/ir/21-2/paper713.html (Archived by the Internet Archive at https://web.archive.org/web/20170805232143/http://www.informationr.net/ir/21-2/paper713.html#.XzPMKl7n1U)
Huvila, I. (2018). Ecology of archaeological information work. In I. Huvila (Ed.), *Archaeology and archaeological information in the digital society* (pp. 121-141). Routledge. http://dx.doi.org/10.4324/9781315225272-7
Huvila, I. (2019). Genres and situational appropriation of information. *Journal of Documentation*, *75*(6), 1503-1515. http://dx.doi.org/10.1108/JD-03-2019-0044
Jamali, H.R., Nicholas, D., Watkinson, A., Herman, E., Tenopir, C., Levine, K., Allard, S., Christian, L., Volentine, R., Boehm, R. & Nichols, F. (2014). How scholars implement trust in their reading, citing and publishing activities: geographical differences. *Library & Information Science Research*, *36*(3-4), 192-202. http://dx.doi.org/10.1016/j.lisr.2014.08.002
Jeon, G.Y. & Rieh, S.Y. (2014). Answers from the crowd: how credible are strangers in social Q&A? In *iConference 2014 Proceedings*, (pp. 663-668). https://deepblue.lib.umich.edu/bitstream/handle/2027.42/106410/Jeon_Rieh_iConference2014_answers%20from%20the%20crowd.pdf?sequence=1&isAllowed=y (Archived by the Internet Archive at https://web.archive.org/web/20170822003826/https://deepblue.lib.umich.edu/bitstream/handle/2027.42/106410/Jeon_Rieh_iConference2014_answers%20from%20the%20crowd.pdf?sequence=1&isAllowed=y)
Kelly, M. (2019). Epistemology, epistemic belief, personal epistemology and epistemics: a review of concepts as they impact information behavior research. In T. Gorichanaz, W. Afza & M. Mahi (Eds.), *ASIS&T SIG-USE Annual Research Symposium: Re-envisioning the impact and engagement of information behavior research*. ASIS&T Publications. https://siguse.files.wordpress.com/2019/10/rileyallen2019.pdf
Kern, D. & Hienert, D. (2018). Understanding the information needs of social scientists in Germany. *Proceedings of the Association for Information Science and Technology*, *55*(1), 234-243. http://dx.doi.org/10.1002/pra2.2018.14505501026
Kim, S. (2010). Questioners´ credibility judgments of answers in a social question and answer site. *Information Research*, *15*(2), paper 432. http://informationr.net/ir/15-2/paper432.html (Archived by WebCite® at https://www.webcitation.org/6GNVXn8w7)
Kostagiolas, P., Korfiatis, N., Kourouthanasis, P. & Alexias, G. (2014). Work-related factors influencing doctors search behaviors and trust toward medical information resources. *International Journal of Information Management*, *34*(2), 80-88. http://dx.doi.org/10.1016/j.ijinfomgt.2013.11.009
Lankes, D.R. (2008). Credibility on the internet: shifting from authority to reliability. *Journal of Documentation*, *64*(5), 667-686. http://dx.doi.org/10.1108/00220410810899709
Lincoln, Y.S. & Guba, E.G. (1985). *Naturalistic inquiry*. Sage Publications.
Liu, A. (2004). *The laws of cool: knowledge work and the culture of information*. The University of Chicago Press. http://dx.doi.org/10.7208/chicago/9780226487007.001.0001
Lloyd, A. (2004). Working (in) formation: conceptualizing information literacy in the workplace. In P. Danaher, C. Macpherson, F. Nouwens & D. Orr (Eds.), *Proceedings of the 3rd International lifelong learning conference* (pp. 218-224). Central Queensland University Press. https://pdfs.semanticscholar.org/6df5/32373226dfb1dc8d3b60b2dd7fb8e8e9350.pdf (Archived by the Internet Archive at https://web.archive.org/web/20190225115433/http://pdfs.semanticscholar.org/6df5/32373226dfb1dc8d3b60b2dd7fb8e8e9350.pdf)
Lucassen, T. & Schraagen, J.M. (2011). Factual accuracy and trust in information: the role of expertise. *Journal of the American Society for Information Science and Technology*, *62*(7), 1232-1242. http://dx.doi.org/10.1002/asi.21545
Madden, A.D., Ford, N., Gorrell, G., Eaglestone, B. & Holdridge, P. (2012). Metacognition and web credibility. *The Electronic Library*, *30*(5), 671-689. http://dx.doi.org/10.1108/02640471211275710
Mansour, A. & Francke, H. (2017). Credibility assessments of everyday life information on Facebook: a sociocultural investigation of a group of mothers. *Information Research*, *22*(2), paper 750. http://www.informationr.net/ir/22-2/paper750.html (Archived by WebCite® at https://www.webcitation.org/6xuCLCdrv)
Martínez-Ávila, D. & Budd, J.M. (2017). Epistemic warrant for categorizational activities and the development of controlled vocabularies. *Journal of Documentation*, *73*(4), 700-715. http://dx.doi.org/10.1108/JD-10-2016-0129
Mason, L., Ariasi, N. & Boldrin, A. (2011). Epistemic beliefs in action: spontaneous reflections about knowledge and knowing during online information searching and their influence on learning. *Learning and Instruction*, *21*(1), 137-151. http://dx.doi.org/10.1016/j.learninstruc.2010.01.001
Mason, L. & Boldrin, A. (2008). Epistemic metacognition in the context of information searching on the web. In M.S. Khine (Ed.), *Knowing, knowledge and beliefs: epistemological studies across diverse cultures* (pp. 377-404). Springer. http://dx.doi.org/10.1007/978-1-4020-8596-5_18
Matthews, P. (2015). Use of credibility heuristics in a social question-answering service. *Information Research*, *20*(1), paper isic 27. http://www.informationr.net/ir/20-1/isic2/isic27.html (Archived by WebCite® at https://www.webcitation.org/6WxliPQ3q)
McDowell, A. (2002). Trust and information: the role of trust in the social epistemology of information science. *Social Epistemology*, *16*(1), 51-63. http://dx.doi.org/10.1080/02691290152798
McKnight, D.H., Choudhury, V. & Kacmar, C. (2002). The impact of initial consumer trust on intentions to transact with a web site: a trust building model. *The Journal of Strategic Information Systems*, *11*(3-4), 297-323. http://dx.doi.org/10.1016/S0963-8687(02)00020-3
Metzger, M.J. & Flanagin, A.J. (2007). Introduction. In M.J. Metzger & A.J. Flanagin (Eds.), *Digital media, youth, and credibility* (pp. 1-4). MIT
Metzger, M.J. & Flanagin, A.J. (2013). Credibility and trust of information in online environments: the use of cognitive heuristics. *Journal of Pragmatics*, *59*, 210-220. http://dx.doi.org/10.1016/j.pragma.2013.07.012
Metzger, M.J., Flanagin, A.J. & Medders, R.B. (2010). Social and heuristic approaches to credibility evaluation online. *Journal of communication*, *60*(3), 413-439. http://dx.doi.org/10.1111/j.1460-2466.2010.01488.x
Miller, F.Q. (2014). *Knowledge ecosystems of early career academics: a grounded theory of experiencing information use for learning in developmental networks*. QUT ePrints. (Queensland University of Technology. Ph.D. dissertation)
Miller, R.L. (2015). How people judge the credibility of information lessons for evaluation courses and information sciences. In S.I. Donaldson, C.A. Christie & M.M. Mark (Eds.), *Credible and actionable evidence: the foundation for rigorous and influential evaluations* (pp. 39-61). SAGE Publications. http://dx.doi.org/10.4135/9781483383839.n4
Mniszak, C., O'Brien, H.L., Greyson, D., Chabot, C. & Shoveler, J. (2020). "Nothing's available": young fathers' experiences with unmet information needs and barriers to resolving them. *Information Processing & Management*, *57*(2), 102081. http://dx.doi.org/10.1016/j.ipm.2019.102081
Moser, P.K. (1985). Epistemic coherentism: "circles" of justification. In P.K. Moser (Ed.), *Empirical justification* (pp. 59-106). Springer. https://doi.org/10.1007/978-94-009-4526-5
Moss, M. (2011). Is it a question of trust or why are we afraid to go to Ninevehʼ *Archival Science*, *11*(3-4), 409-425. https://doi.org/10.1007/s10502-011-9149-y
RAÄ. (2015). *Uppdragsarkeologi: det uppdragsarkeologiska systemet*.
Rieh, S. & Hilligoss, B. (2007). College students' credibility judgments in the information-seeking process. In M.J. Metzger & A.J. Flanagin (Eds.), *Digital media, youth, and credibility* (pp. 49-72). MIT Press.
Rieh, S.Y. (2010). Credibility and cognitive authority of information. In M.J. Bates & M.N. Maack (Eds.), *Encyclopedia of Library and Information Sciences* (3rd. ed.). (pp. 1337-1344). Taylor & Francis. http://dx.doi.org/10.1081/E-ELIS3-120044103
Rieh, S.Y. & Belkin, N.J. (2000). Interaction on the web: scholars' judgment of information quality and cognitive authority. In D.H. Kraft (Ed.), *Proceedings of the 63rd Annual Meeting of the ASIS* (pp. 25-38). ASIS.
Rieh, S.Y. & Danielson, D.R. (2007). Credibility: a multidisciplinary framework. *Annual Review of Information Science and Technology*, *41*(1), 307- 364. http://dx.doi.org/10.1002/aris.2007.1440410114
Rieh, S.Y., Kim, Y-M., Yang, J.Y. & Jean, B.S. (2010). A diary study of credibility assessment in everyday life information activities on the web: preliminary findings. *Proceedings of the American Society for Information Science and Technology*, *47*(1), 1-10. https://doi.org/10.1002/meet.14504701182
Sahut, G. (2014). Citez vos sources: archéologie d'une règle au cœur du savoir wikipédien (2002-2008) [citing sources: archaeology of a referencing policy at the heart of wikipedian knowledge (2002-2008)]. *Études de communication*, *42*, 97-110.
Savolainen, R. (2007). Media credibility and cognitive authority. The case of seeking orienting information. *Information Research*, *12*(3), paper 319. http://informationr.net/ir/12-3/paper319.html (Archived by WebCite® at https://www.webcitation.org/5t8h3dMDQ)
Savolainen, R. (2011). Judging the quality and credibility of information in Internet discussion forums. *Journal of the American Society for Information Science and Technology*, *62*(7), 1243-1256. http://dx.doi.org/10.1002/asi.21546
Savolainen, R. & Kari, J. (2006). User-defined relevance criteria in web searching. *Journal of Documentation*, *62*(6), 685-707. http://dx.doi.org/10.1108/00220410610714921
Schibbye, K., Friisk, M., Sander, B. & Westerlind, A. (2007). *Kulturmiljön som resurs: hur kulturmiljöaspekterna på ett ändamålsenligt sätt kan behandlas i miljöbedömningar och miljökonsekvensbeskrivningar*. RAÄ.
Söderström, U. (2018). *Contract archaeology and sustainable development: between policy and practice*. Linneuniversitetet Publications. (Licentiate thesis, Linnaeus University, Kalmar)
Ståhl, T. (2019). Epistemic beliefs and googling. *Frontline Learning Research*, *7*(3), 27-63. http://dx.doi.org/10.14786/flr.v7i3.417
Sundin, O. & Francke, H. (2009). In search of credibility: pupils´ information practices in learning environments. *Information Research*, *14*(4), paper 418. http://InformationR.net/ir/14-4/paper418.html (Archived by WebCite® at https://www.webcitation.org/5t1j2fjih)
Swanson, T. (2005). Teaching students about information: information literacy and cognitive authority. *Research Strategies*, *20*(4), 322-333. http://dx.doi.org/10.1016/j.resstr.2006.12.007
Syn, S.Y. & Kim, S.U. (2013). The impact of source credibility on young adults' health information activities on Facebook: preliminary findings. *Proceedings of the American Society for Information Science and Technology*, *50*(1), 1-4. https://doi.org/10.1002/meet.14505001122
Taraborelli, D. (2008). How the web is changing the way we trust. In A. Briggle, K. Waelbers & P.A.E. Brey (Eds.), *Proceeding of the 2008 conference on Current Issues in Computing and Philosophy* (pp. 194-204). IOS Press.
Thompson, M.P.A. & Walsham, G. (2004). Placing knowledge management in context. *Journal of Management Studies*, *41*(5), 725-747. http://dx.doi.org/10.1111/j.1467-6486.2004.00451.x
Trace, C.B. (2007). Information creation and the notion of membership. *Journal of Documentation*, *63*(1), 142-164. http://dx.doi.org/10.1108/00220410710723920
Trigger, B.G. (2006). *A history of archaeological thought*. Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511813016
Tseng, S. & Fogg, B.J. (1999). Credibility and computing technology. *Communications of the ACM*, *42*(5), 39-44. http://dx.doi.org/10.1145/301353.301402
Van Der Heide, B. & Lim, Y-s. (2016). On the conditional cueing of credibility heuristics: the case of online influence. *Communication Research*, *43*(5), 672-693. http://dx.doi.org/10.1177/0093650214565915
Van House, N.A. (2002). Trust and epistemic communities in biodiversity data sharing. In *Proceedings of the 2nd. ACM/IEEE-CS Joint Conference on Digital Libraries* (pp. 231-239). ACM Press. http://dx.doi.org/10.1145/544220.544270
Wang, F., Tong, Y. & Danovitch, J. (2019). Who do I believe? Children's epistemic trust in internet, teacher, and peer informants. *Cognitive Development*, *50*, 248-260. http://dx.doi.org/10.1016/j.cogdev.2019.05.006
Wathen, C. & Burkell, J. (2002). Believe it or not: factors influencing credibility on the web. *Journal of the American Society for Information Science and Technology*, *53*(2), 134-144. http://dx.doi.org/10.1002/asi.10016
Wersig, G. (1973). *Informationssoziologie: hinweise zu einem informationswissenschaftlichen teilbereich*. Athenäum-Fischer.
Whitley, R. (1984). *The intellectual and social organization of the sciences*. Oxford University Press.
Wilson, P. (1983). *Second-hand knowledge: an inquiry into cognitive authority*. Greenwood Press.
Woxland, C., Cochran, D., Davis, E. & Lundstrom, K. (2017). Communal and student-centered: teaching information creation as a process with mobile technologies. *Reference Services Review*, *45*(1), 79-99. http://dx.doi.org/10.1108/RSR-03-2016-0023
Yang, F-Y., Chen, Y-H. & Tsai, M-J. (2013). How university students evaluate online information about a socio-scientific issue and the relationship with their epistemic beliefs. *Journal of Educational Technology & Society*, *16*(3), 385-399.
Yang, J.Y. & Rieh, S.Y. (2013). A dyadic approach to information mediation at work: examining credibility and value perceptions. In *iConference 2013 Proceedings* (pp. 223-234). https://deepblue.lib.umich.edu/bitstream/handle/2027.42/106412/Yang_Rieh_iConference2013.pdf?sequence=1&isAllowed=y (Archived by the Internet Archive at https://web.archive.org/web/20200812091036/https://deepblue.lib.umich.edu/bitstream/handle/2027.42/106412/Yang_Rieh_iConference2013.pdf?sequence=1&isAllowed=y)
Yi, Y.J., Sivilia, B. & Mon, L. (2012). Cultural influences on seeking quality health information: an exploratory study of the Korean community. *Library & Information Science Research*, *34*(1), 45-51. http://dx.doi.org/10.1016/j.lisr.2011.06.001

How to cite this paper

Huvila, I. (2020). information-making-related information needs and the credibility of information. In *Proceedings of ISIC, the Information Behaviour Conference , Pretoria, South Africa, 28 September - 1 October 2020. Information Research*, *25*(4), paper isic2002. Retrieved from http://InformationR.net/ir/25-4/isic2020/isic2002.html (Archived by the Internet Archive at https://bit.ly/3gD6KRq)
https://doi.org/10.47989/irisic2002

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Last updated: 27 November, 2020