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Genres and Situational Appropriation of Information: Explaining Not-seeking of Information

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Abstract

Purpose. Information science research has begun to broaden its traditional focus on information seeking to cover other modes of acquiring information. The aim of this article is to move forward on this trajectory and to present a framework for explicating how in addition to being sought, existing information are made useful and taken into use.

Design/methodology/approach. A conceptual inquiry draws on an empirical vignette based on an observation study of an archaeological teaching excavation. The conceptual perspective builds on Andersen's genre approach and Huvila's notion of situational appropriation.

Findings. This article suggests that information becomes appropriable, and appropriated (i.e. taken into use), when informational and social genres intertwine with each other. This happens in a continuous process of (re)appropriation of information where existing information scaffolds new information and the on-going process of appropriation.

Originality/value. The approach is proposed as a potentially powerful conceptualisation for explicating information interactions when existing information is taken into use rather than sought that have received little attention in traditional models and theories of human information behaviour.

Keywords. genre, situational appropriation, not-seeking, scaffolding, information-seeking, information needs, information work, information behaviour, information practices

Introduction

The recent decades of information science research have considerably broadened our understanding of how people seek and acquire information. Whereas much, albeit not all, of the earlier work has focused primarily on purposeful information

searching, since the 1990s onwards scholars have increasingly acknowledged and emphasised the significance of serendipitous and accidental discovery (Erdelez & Makri, 2011) and the embeddedness of information work and information practices in everyday professional and leisurely activities (Huotari & Chatman, 2001) and duties (Ocepek, 2018). Conceptualisations like information practices (Cox, 2012) and literacies (Lloyd, 2011), and information in social practices (e.g. McKenzie, 2009; Cox, 2013) have been useful in widening the focus of inquiry. In spite of this broadening of focus, much of information research is still premised by the idea of the primacy of an (explicit or implicit) information need that is leading people to seek information (Case & Given, 2016). The needs can be implicit, and searching accidental (Agarwal, 2015) and embedded in a certain practice (Lloyd, 2011) but there are only relatively few cases (e.g. Andersen, 2008; Huvila, 2015; Feinberg, 2017) that have focussed on situations when information use is not preceeded by satisfying a need by seeking (new) information.

The aim of this article is to move forward on the trajectory of challenging the hegemony of the long-standing tenet of information science research to focus on diverse forms of information *seeking* and to nuance the picture by presenting a framework for explicating how in addition to being sought, existing information is also *made useful and taken into use* in the course of information work. The aim should not be interpreted as an attempt to deny the relevance of information seeking perspective or the empirical fact that people seek a lot of information but to stress that not all information used by people is sought or even encountered accidentally – or to put it differently, that these conceptualisations are not necessarily always the best way to describe how information ends up being used by people. Alternative framings of information work could provide new perspectives to how and why people interact with information, and consequently open up for new practical approaches to help people to cope with information. Finally, a consideration of alternatives could also pave way for a greater awareness and explicitness about assumptions that underpin the conceptualisations of the structures of information interactions in information science research.

The present text draws from Andersen's (2008) genre-based approach to explicate information practices "backwards" from information genres together with the notion of the *situational appropriation of information* proposed by Huvila (2015) as a conceptual starting point to describe how information is made useful and shows how the taking of available information into use can play a significant role in information work, even more prominent than explicit seeking or serendipitous discovery of information. This article suggests that these two perspectives complement each other by providing means to explain both premises (genre) and mechanisms (situational appropriation) of the uptake of information. The conceptual discussion draws from an empirical vignette of an observation study of a group of archaeologists working on a week-long excavation in a Nordic country conducted in Spring 2016. Observations in this highly multi-faceted empirical setting of information work – which is an information seeking and use exercise *par excellence* – where information is sought, used and managed in

numerous ways are used to illustrate how and when people appropriate information, how information influences its appropriability, and how appropriation links to accidental and purposeful seeking of information.

Information interactions beyond seeking and retrieval

In spite of its apparent violence to the complexity of everyday life, the predominant perspective to information activities in information science research has been to conceptualise them as processes or practices comprising or relating to the triad of needs, seeking and use (e.g. Talja & McKenzie, 2007; Case & Given, 2016). A classical information seeking process starts with an explicit, or as more recent studies have acknowledged, often rather implicit (information) need that triggers information seeking, evaluation of sought information (cf. Case & Given, 2016), and the seldom extensively elaborated process of information use (Vakkari, 1997; Savolainen, 2009). This process is facilitated by other activities such as management (Detlor, 2011), searching, retrieval, and organisation of information (Hjørland, 2012), and the sometimes mentioned but rather rarely elucidated undertaking of creating information (Trace, 2007).

In spite of the resilience of the information seeking perspective, especially the newer information science literature has begun to propose alternative emphases (e.g. Feinberg, 2017), and perspectives to what precedes information use. The contextual emphasis in information science research has contested the earlier orthodoxy of perceiving information needs as the primary impetus of information seeking especially from the 1990s onwards (Savolainen, 2017). The research on incidental information acquisition has demonstrated further that with information encountering and serendipitous discoveries it can be impossible, or very difficult, to explicate specific information needs at all (Savolainen, 2017). Eventual needs are embedded in a situation and similarly to searching, it can be influenced by the unconscious (cf. Liu & Albright, 2018). Another problem with the notion of information seeking, as Keilty and Leazer (2018) note, relates to its origins in an era and contexts where information seeking and searching were typically distinct activities, whereas at the present, searching and browsing have become close to ubiquitous activities and a source of cognitive and emotional stimulus (Haider & Sundin, 2019). The ubiquity and effectiveness of searching reminds of Jevons paradox (Nardi et al., 2018) that more efficient technologies lead to increasing consumption. In an analogous manner, more effective information seeking seems to have led to an overflow of information and information searching – in a manner discussed, for instance, by Huvila (2012a; 2016a), Haider and Sundin (2019), and others. Savolainen's (2016) overview of information seeking related concepts shows that the term has been used to refer to a broad range of modalities of information acquisition, also beyond seeking and searching. The use of the term is, however, somewhat problematic in these contexts as it emphasises unavoidably the role of (intentional) rum-

maging and marginalises other types of practices. Of the terms discussed by Savolainen, the concept *information acquisition* is perhaps closest to include *not-seeking* i.e. attainment of information by others means than seeking (cf. non-seeking). Wilson (1997) points that it is a better term than information seeking for describing such modes of obtaining information as passive attention. However, as Savolainen (2016) notes, information acquisition is not an especially common concept in information science research (exceptions e.g. Wilson, 1997; Williamson, 1998; Bates, 2002) in comparison to neighbouring fields, including for instance, management science. Another issue with the earlier research on not-seeking is that it has had a tendency to concentrate on explicit moments of discovery. As Savolainen (2016) notes, information encountering literature focuses on such meetings with information when it is recognised as potentially interesting and excludes "constant everyday reality in which all our senses are constantly bombarded with data and information" (Savolainen, 2016).

The introduction of new concepts and shift of empirical focus in information science research cannot be separated from broader theoretical developments within the discipline. In addition to the contextual emphasis in information (seeking) behaviour research also the move from systemic, cognitive and processual towards user and use-centred, social, constructivist and constructionist theorising (Talja et al., 2005) has broadened the perspective of research from seeking to other types of interactions. Especially the practice oriented thinking has shifted focus from individual interactions to broader and more complex arrangements of activities. The recognisation of the significance of contexts and situations and their influence on various types of information activities (e.g. Sonnenwald, 1999; Johnson, 2003; Foster & Ellis, 2014; Gaston, 2017), broadening of the practical scope of interest from information seeking processes to information interaction processes (e.g. the concept of 'information journey' of Blandford & Attfield, 2010), and the acknowledgement of their social rather than merely cognitive underpinnings (Frohmann, 1992; Talja & McKenzie, 2007) contain elements that open up for the possibility of widening the purview of inquiry from the linear trajectory of needs, seeking and use towards other modalities of how information is and becomes a part of people's daily pursuits. Also the phenomenographical (Limberg, 2000) and phenomenological (e.g. Frohmann, 2004, see also e.g. Suorsa & Huotari, 2014; Gorichanaz & Latham, 2016; Cibangu & Hepworth, 2016) research traditions come with similar opportunities – even if the mechanisms of the contextual interactions described as behaviours, practices, and phenomena have not been conceptualised to an especially broad extent in the literature so far.

As a whole, it seems that the outspoken theoretical and empirical ambitions to investigate all possible types of information practices have only seldom led to studies that would have seriously decentred the seeking of information. There are some exceptions. For instance, Solomon (1997) analyses the role and place of information in a work context concluding that "participants do not think of information or actions to collect, process, or use information as something separate from the task or problem at hand" (Solomon, 1997, p. 1125). Information work is a part of activity people often call sense-making without

making a clear distinction between different types of information interactions: "one person's input is often another's output" (Solomon, 1997, p. 1125). Also Burnett and Jaeger (2008) criticise the overemphasis of information seeking and underline the interactive, communicative and contextual nature of information interactions with their notion of information worlds. Lundh and Limberg (2008) nuance the picture by problematising the orthodoxies of information behaviour and practices research and observe that in an elementary school environment information seeking is attached with very specific meanings which fail to capture the full variety of information seeking. Also Lloyd (2009) takes an alternative perspective when describing informing practices of ambulance personnel from information literacy and information experience perspectives. The latter notion of information experience (discussed earlier e.g. by Bruce, 1997) has been developed and discussed further in the edited volume by Bruce et al. (2014) as an explicit approach to conceptualise "complex, multidimensional engagement with information" (Bruce et al., 2014). The editors propound information experience as a potential, independent research domain comparable to information seeking and information sharing. This specific proposition remains, however, somewhat vague in the volume, because in parallel, information experience is conveyed as an aspect of canonical information interactions, including information seeking (Bruce et al., 2014). Following a related trajectory, Arafat and Ashoori (2018) suggest a refocus of information science research from searching (of information) to technology-mediated experience. In comparison to explicitly information-centric approaches, their take broadens the field towards the nexus of socio-technical interactions. As a final example, French has proposed the concept of information bricolage (based on the concept of bricolage of Lévi-Strauss, 1962), to describe "the engagement in fluid, unplanned, collaborative information practices, through the use or recombination of resources close to hand" (French, 2014 see also French & Williamson, 2016). With its emphasises of human manipulation and use of resources, it differs from the (socio)cognitive emphasis of sense-making and experiencing, and the focus on competences and capabilities in information literacy research.

Genre approach and situational appropriation

In contrast to the earlier, primarily human-centred notions of sense-making (Solomon, 1997), information bricolage (French, 2014) and information experience (Bruce et al., 2014), the present study assumes a slightly different perspective by taking Andersen's (2008) genre-based approach and the notion situational appropriation of information (Huvila, 2015) as starting points. They are both information and context centric approaches and describe interactional modalities that are fundamentally different from the conventional continuum of information seeking and use. This article argues that these two perspectives complement each other by providing a framework for explaining what in information makes it useful in a specific situation (genre) and how the uptake happens in practice (appropriation). As illustrated by the empirical vignette, the genre

approach provides a meta-perspective to shared characteristics of categories of information artefacts and their becoming, rather than focusing on particular types of information, inscriptions (Latour, 1983) or, for instance, documents (Lund, 2009). Simultaneously, the social genre theory provides an explicit link between typologies of both information and social actions. As for situational appropriation, there is a dearth of frameworks how to explain 'not-seeking' of information.

Genre

Compared to the conventional information science research, Andersen (2008) took a radically different approach by using the notion of genre as a conceptual tool to proceed "backwards" towards information activities. The contemporary social genre theorising, both in information science and other fields, can be traced back to Schutz and his concept of typification (Schutz, 1970). In social, non-literary sense, genres are treated as typified forms of social actions (Miller, 1984). They convey worldviews by providing an example of how to act – either on the level of unconscious action or explicit strategies and tactics (Russell, 2009). In contrast to traditional user studies, the starting point in this approach is not a user or an information need but information and its genre: how a particular information came to being, why it looks like as it does, what types of activities it was made to support, who were involved in its making and what is its broader context.

The idea that action stems from information is also present in the Tanupabrungsun and colleagues' notion of *information affordance* (Tanupabrungsun et al., 2018) and in how Byström and Pharo (2019) suggest that information artefacts, "through their availability lead certain type of information needs" (Byström & Pharo, 2019, p. 119). In contrast to Tanupabrungsun *et alii* and Byström and Pharo, genre-based approach goes further by suggesting genre as something that links together particular types of information or information artefacts.

Andersen (2008) suggests that "a particular genre defines an information need" and McKenzie (2015) posits further, referring to Talja and McKenzie (2007), that by assuming Andersen's (2008) approach, it is possible "to understand the ways that "information" is accomplished out of the social and documentary practices of participants in particular settings" (McKenzie, 2015, p. 68). Genres "mediate our efforts to know" (Siskin, 2016, p. 1) and provide an entry to the fugitive notion of context (McKenzie, 2015).

In addition to the notion of genre, Andersen discusses Berkenkotter and Huckin's (1993) concept of genre knowledge, "a form of situated cognition" that refers to knowing how to use an understanding of genre. His proposal is that genre knowledge can be utilised in elucidating information seeking activities in different types of "situations and institutional settings" (Andersen, 2008).

Situational appropriation

The notion situational appropriation of information (Huvila, 2015) represents a somewhat different approach to the question of approaching information activities from the perspective of genre. The notion refers to events when "situation makes such information relevant and useful that is already known by an individual or a group, or given by the context of their activity" (Huvila, 2015, p. 499). Complementing the observations of how the context of making affects information and documents (e.g. Baake, 2003), it places emphasis on the context and situation of use. Situational appropriation shares its emphasis of the situations with ethnomethodology (Garfinkel, 1967) and the theorising on situated cognition (Brown et al., 1989) and action (Suchman, 1987) but similarly to Compton (2013), it assumes a degree of transferability of information and knowledge between different situations through the acts of appropriation. Even if the value of information does not exist as abstract ideal entities as Goguen (1997) underlines, appropriation has a capability to link specific situations and things together making the latter informative. It is possible to see situational appropriation and the recently proposed notion of infrastructural meaning-making (Haider & Sundin, 2019) as related to each other. The first mentioned anchors information, its use and usefulness in a particular whereas the latter delves in trying to understand the infrastructural underpinnings of why certain information surfaces as appropriable in specific infrastructural conditions. In these contexts both infrastructures and situations are closer to being scaffolds (Bowker & Star, 2000) that afford (Gibson, 1977) particular ways of appropriating and using information rather than being their determinants, or as for Furner (2004), information in itself.

The use of the concept of appropriation draws from how it is understood in sociological and technology studies (e.g. Orlikowski, 1992; Mackay & Gillespie, 1992; Tchounikine, 2019) literature as a (potentially) positive and creative use of things (e.g. information) in particular situations. Generally information needs to have a history that is a part of its usefulness before it is appropriated – much similarly to how artist Helen Barff describes her appropriation of old objects for her work (Evans, 2014). In addition to bringing clarity to a particular type of information use that is difficult to explain by using earlier concepts such as bricolage or sense making, Huvila (2015) posits that situational appropriation provides an alternative to the primacy of information need as a propeller of a process of searching and seeking for new information, or *information taking* (Huvila, 2018) i.e. when information is taken one's own in a situation. Simultaneously, it foregrounds the relational nature of information (e.g. Budd, 2013; Erdelez et al., 2011) and active role of situation in how different things become informative rather than in how context and situation influence (human) information interactions. According to the categorisation of social theories of Cohen (1996), the underpinnings of situational appropriation of information are without much doubt in praxis rather than action based worldview.

Huvila reports that in his empirical material, appropriation seemed often to be linked to comparatively systematic and pre-programmed on-going attempts

to find particular types of information, and long-lasting partnerships and memberships in informational communities. A central premiss of appropriation is pre-awareness of information, which eventually turned out to be useful. The process could involve serendipity or, using the conceptual apparatus of political theorist Bennett (2010), engagement with the vibrancy and vitality of information and cultivating a sense of enhancement on it at an earlier stage of the process. In contrast, at the moment of appropriation the process tended to be relatively systematic. However, even if pre-awareness would be a frequent antecendent, the success (or failure) of situational appropriation, at heart, depends on how well an individual (or a group) succeeds in making information useful in a given situation. When comparing it to how Day outlines information need as a "product of best fit, rather than exact match" of "what we see as available" (Day, 2017), the act of appropriating information can be seen as a moment when information is taken into use and at the same time, seized as something that is (and looking back, was) needed. It is, as Huvila (2015) underlines, a simultaneous process of assuming a possession, and discerning and determining the relevance and sufficiency of a particular piece of information that is being appropriated. Similarly to Day (2017) and unlike to Walton (2017), it is a question of a best fit and usefulness rather than that of an exact match or correctness.

Empirical vignette

In order to provide an insight into how genres and situational appropriation play out when information is made useful in a situation, we are next turning to an empirical vignette. An observation study of a group of archaeologists working on a week-long excavation in a Nordic country was conducted in Spring 2016. Observations from this empirical setting of information work are used to provide examples of how and when people appropriate information, how information influences its appropriability, and how appropriation links to accidental and purposeful seeking of information. Before embarking to the analysis of empirical data, we take a brief detour to review the literature on archaeological information work.

Archaeological information work

There is a growing body of literature on archaeological information work (e.g. Huvila, 2006; Börjesson et al., 2016; Olsson, 2016; Buchanan, 2016; Börjesson & Huvila, 2019). Relevant work has been conducted also in the context of ethnographic research of archaeological work (e.g. Edgeworth, 2006; Davidović, 2009) and archaeological theory (e.g. Lucas, 2001, 2012; Huggett, 2012). The archaeological work itself is diverse, engages a large number of stakeholders from field archaeology, to education, cultural heritage management, amateur archaeology and land development (Huvila, 2017, 2006; Hunt, 2005), and the stakeholders tend to have many, even conflicting, duties, workroles (Huvila, 2006), policies and ideals that guide and influence their work (Börjesson, 2016).

Unsurprisingly, there are many fault lines in the priorities of how archaeological information is best recorded according to different actors in the field (Khazraee, 2013).

Huvila has studied archaeological information work (Huvila, 2006) and information source use (Huvila, 2014) coming to a conclusion that the information horizon of archaeologists depends on context and situation and includes a broad range of different types of documents from scholarly literature to human sources. Archaeological reports (Huvila, 2011), physical finds and archaeological stratum (Huvila, 2006) and images (Beaudoin, 2014) are especially important sources of information. Olsson (2016) has recently stressed the embodied nature of information practices in field archaeology and described meticulously how archaeologists seek information by feeling and even tasting physical objects. As a whole, materiality (including different types of materialities) is a central aspect of archaeological information (Huvila, 2016b) and expertise (Wylie & Chapman, 2015). In this respect, Zuboff's paraphrasing of Descartes when describing the information work of paper mill workers "I see, I touch, I smell, I hear; therefore, I know" (Zuboff, 1988, p. 62) is to the point also in describing how archaeology is achieved. Indications of the significance of (from information science perspective) non-traditional information sources can be found also in archaeological literature. Even if criticised (e.g. Fleming, 2006), for instance, landscape archaeology (Knapp & Ashmore, 1999) has engaged in "reading" landscapes (Yamin, 1997) in metaphorical and theoretical but also in empirical sense to use them as 'documents' (cf. Grenersen et al., 2016) of the past human interactions with landscapes.

In addition to being embodied and embedded in physical practices, archaeological information work is also a social enterprise. This is not necessarily always reflected in the popular imagination of archaeology as a discipline of documentation or even in how archaeological information is managed (Huvila, 2019). Especially in fieldwork, colleagues and the social context are significant resources that complement the physical environment as a source of information (Carman, 2006) and where field schools function as a central milieu for educating archaeologists (Mytum, 2012). The significance of social exchange spurred Morgan and Wright (2018) to urge that in contrast to Hodder's (2000) much cited claim, archaeology is not formed at trowel's edge but "in conversations at the edge of the trench" (Morgan & Wright, 2018, p. 146). This is not unlike from other workplaces where the importance of colleagues as an information source was acknowledged already in the 1960s (Allen, 1969; Allen & Cohen, 1969) and since then reconstituted in later studies (e.g. Hertzum, 2014; Saastamoinen, 2017). The comprehensiveness of archaeological information work and its contextual entanglement in archaeological and archaeology related practices (Huvila & Huggett, 2018) makes it a fleeting subject and as such, archaeological information interactions can be difficult to frame as distinct engagements with information in another than analytical sense with a specific purpose of focusing on and identifying instances of, for example, seeking, searching, organising or making of specific pieces of information. The urge to appreciate the complexity of archaeological evidence (Wylie & Chapman, 2015) should be extended to ar-

chaeological information work as well. It is conceivable that even if explicit task descriptions can have analytical relevance also in the context of archaeology, there are limitations in how well they can capture the complexity and eventualities of actual actions and their conditions (as in Bødker, 2009). Instead of being steered by explicit procedures – even if there has been a desire to describe and define workflows – the reading of documents, first-hand observations and social information are guided by the scaffolding (Wylie & Chapman, 2015; Chapman & Wylie, 2016; Wylie, 2018) of pre-understandings, or "enormously diverse range of background knowledge and technical resources that inform their use of surviving material traces as evidence." (Wylie, 2018, p. 204). The continuous making and remaking of these scaffolds in time means that archaeological data has a capacity to bite back in ways which can be difficult to anticipate (Wylie, 2018). As Monteiro and colleagues (2018) underline, scaffolding is performative, dynamic, provisional and decentred rather than static and predictable, and it is capable of making not only the data but the discipline itself as Nikolaou's (2017) insightful investigation of archaeological field notebooks and their impact on the development of archaeological discipline shows.

Material and methods

This empirical material for this vignette was gathered by observing a five days long (Monday to Friday) archaeological teaching excavation. The excavation was conducted on a lithic site in a Nordic country in 2016. The excavation team (Table 1, all participants were assigned false names for reporting purposes) consisted of Serendippo, the director of the excavation, senior archaeologist Tramezzino (working with the new digital documentation infrastructure on the site) and his assistant Giaffer, and another senior Armeno who worked as a finds officer being responsible for cataloguing, cleaning and processing of the finds collected at the excavation. In addition, the team consisted of 11 undergraduate and graduate archaeology students, a part of which came from the country where the excavation took place and a part from other European countries.

The study was conducted as a non-intrusive participant observation (Hammersley & Atkinson, 1995). The author participated and observed the work of the team throughout the entire duration of the excavation taking written and audio-recorded notes and photographs. In order to capture the situation as naturalistic as possible, the author tried to avoid interfering with the work and discussions of the observees. The non-intrusive approach was deemed possible, because the author had previous first-hand experience of participating and working on several archaeological excavations. This experience reduced the need to ask the observees to explain everything they did in detail and provided a point of comparison to what was generic and particular at the particular excavation. Even if explicit interviewing was kept to minimum, the archaeologists and students were asked clarifying questions whenever needed. However, even if the author was trying to be non-intrusive, especially the archaeologists and increasingly towards the end of the week, also the students came to talk to him, telling about their work and asking their own questions. These discussions con-

Participant	Role at the excavation
Serendippo	Director of the excavation, expert of lithic archaeology
Tramezzino	Archaeologist, director of the work with the development of photo-documentation method
Armeno	Finds officer, responsible for physical materials retrieved, expert of lithic archaeology.
Giaffer	Archaeologist working with the development of photo-documentation method
Walpole	Student
Zadig	Student
Voltaire	Student
Khusrau	Student
Diliramma	Student
Iddio	Student
Reina	Student
Becher	Student
Girolamo	Student
Giustiniano	Student
Beramo	Student
Michele	An archaeologist who visited the site on Day 3 (Wednesday)

Table 1: Participants of the excavation.

tributed significantly to the richness of the material and provided opportunities for informal interviews but they were also a reminder of what Kunda (2006) stresses that the presence of the observer influences the observed community and activities even if the observer would try to interfere in the situation as little as possible. When travelling to and from the excavation, the author had also a possibility to discuss with one of the archaeologists (Tramezzino) about the work at the site for approximately one hour each day.

The approach for analysing ethnographic data was based on constant comparative method (Glaser & Strauss, 1967) and close reading (DuBois, 2003). Finally, after a preliminary analysis was complete, the material was revisited using negative case-analysis (Lincoln & Guba, 1985, 309-313) with the specific purpose of finding contradictory evidence (as e.g. in Zach, 2005) that would decrease the reliability of the conclusions.

The empirical approach has some obvious limitations. Findings are based on a case study of a single, relatively short teaching excavation that limits the possibilities to generalise the expressed views. In order to control for the over-expression of individual opinions, the analysis places a special emphasis on views expressed by multiple individuals and recurring activities. Secondly, bearing the aim of the present study to explore how information is taken into

use in mind, the possible inability to generalise findings of the specific aspects of the particular excavation is not considered to be a major issue.

Analysis

Due to the limited space in a journal article, the analysis focuses on providing a selection of glimpses to the data. This section provides a non-exhaustive list of examples of information genres observed at the excavation, how the genres were referred to, how they emerged and were made and put into practice when information was sought and not-sought, and finally how the obtained information was made useful by archaeologists and students at the site. These empirical observations are revisited later in the text and used as a basis for a conceptual blueprint of how informational genres affect how information is appropriated into use.

Information genres on an archaeological excavation Even if an archaeological excavation is a complex process with a large number of actors, tools and types of information, it became apparent during the fieldwork that there are certain genres of information that prevailed at the site. The Table 2 describes a selection of genres identified in the analysis of the observation data according to the aspects of informational genres explicated by Andersen (2008). The aim is to illustrate the diversity of genres rather than to provide a comprehensive inventory.

At this particular excavation, conducted using the single-context (Drewett, 1999) method, predominant informational genre at site was *stratigraphic unit*. The idea of units is based on two basic assumptions that an archaeological site is stratified and the stratification is unique and formed by three-dimensional units (or sometimes contexts) of stratification that can be either volumes (deposits) or surfaces (e.g. walls or pits) (Harris, 1989). The units are supposedly natural outcomes of events (e.g. building a road, digging a rubbish pit and filling it with litter) that have taken place on the site in the past but at the same time, they are a result of the interpretations made by excavating archaeologists on where one unit ends and another one begins. A unit resides in a time-space continuum that incorporates present and past landscapes but also as a concept within the single-context method – as opposed to excavating site according to standard-size squares and layers with uniform thickness. Their primary purpose is to make the site and its past understandable but also to make the excavation and interpretation manageable tasks. By deciding that the site was archaeologically interesting and categorising the archaeological stratum at the site to units, it was appropriated as a source of archaeological information. Serendippo described this process to the students in the beginning of the excavation by explaining how the site was originally found and how it was selected as a site for the specific excavation, partly because of practical reasons (it was close to the home university and there was good infrastructure in place that made it easy to excavate there) and partly because it was expected to provide interesting insights in the past of the locality on the basis of what was known about the

Genre	What types of activities the particular types of information were made to support	Who were involved in its making	What is its broader context	What are its related information needs
Stratigraphic unit	Categorisation and interpretation of the past activities and processes at the site	Archaeologists excavating at the site; past human-beings active on the site; natural processes	Archaeological site; modern landscape around the site; past landscape around the site; past events that lead to the formation of an identifiable unit; single-context based excavation approach	Understanding past activities and processes on the site; make the archaeological stratum manageable for archaeological documentation and interpretation
Photograph	Understanding how the site looked like at different points of the excavation; producing a photogrammetric model of the site	Archaeologists taking photographs on the site	Site documentation; archaeological photography	To know how the site and stratigraphic units looked like when excavated; to produce adequate documentation of the site
Site report	Getting an overview of the excavation process and its results; checking that the excavation took place and was conducted properly; information seeking on the site and excavation	Director of the excavation; experienced archaeologists participating in the excavation; all archaeologists and students participating in the excavation; archaeology administrator who granted permission to excavate and oversees the process	Archaeology; archaeological heritage administration	Understanding the results of the excavation and the excavation process; confirm that the excavation took place and was conducted properly
Colleagues	Understanding and contextualising first-hand observations; learning procedures	All participants of the excavation (including the author of this text)	Archaeology; everyday-life experiences and expertise of the colleagues outside of archaeology	A significant part of all immediate information needs at the site

Table 2: A selection of information genres at the studied excavation.

site and earlier land use in the area. The appropriation continued during the excavation in a continuous exploration and negotiation of the limits and origins of the different units, and what they and their contents and characteristics could tell about the past of the site.

Another key genre at the site was *photograph*. In contrast to the conventional use of photographs to visualise details on the site and the excavation process as a part of the site documentation, at the observed excavation they were also used as raw material for producing a three-dimensional photogrammetric computer model of the site at specific moments during the excavation. Photographs were primarily taken by graduate students and experienced archaeologists. The complex discussions on photographs, their role and limitations in representing the archaeological stratum, how the choice of the moment and angle of taking a snapshot, lighting and shadows and the humidity of the earth either exposes or hides details reveal the convolutedness of photographs as a genre. In contrast to some positivistic assumptions and similarly to how Belardi (2014) convincingly argues how architectural *disegno* (drawing) is much more than drawing and how architectural *rilievo* (survey) is much more than merely measuring, also archaeological photodocumentation is a much more complex intellectual process (cf. Nowak, 2014) than a mere technical exercise of measuring the site.

Third genre with an apparent significance at the studied excavation (as for archaeological investigations in general, e.g. Hodder, 1989; Huvila, 2016b) was *site report*. Report is typically the main output of an archaeological investigation. It is expected to provide an overview of the excavation process and its results, and at the same time, function as a piece of evidence that the excavation took place and was conducted according to acceptable norms. As a result it is typically the primary source of information on the investigation and its outcomes for archaeologists, heritage administrators and others even if other documents would exist and be available (Huvila, 2016b).

Finally, the fourth genre chosen for a closer scrutiny was *colleagues*, the excavation team consisting of both archaeologists and students, and towards the end of the week, increasingly the author of this article as well. Unsurprisingly in the light of earlier observations on professional information work (Allen & Cohen, 1969; Hertzum, 2014), also in the studied context, the colleagues were the most important source of information together with the site itself for the most of the direct, both implicit and explicit, needs relating to the work-in-hand. The genre encompasses as information both the experienced archaeologists and students with experience from other field sites or especially with students, fresh memories of reading a lot of literature. Each other's and one's own earlier situational experiences were used to provide context, explain and conceptualise first-hand observations on the site. Earlier experiences of the use of tools and methods, uncovering artefacts and working on sites that reminded or were completely different were compared and fitted in the present context as procedural and strategic resources. There was a large variation in how often especially students asked archaeologists for their opinion, particularly in conceptual (e.g. how should I interpret this) and procedural and strategic issues (e.g. how should I proceed with excavation and documentation here),

The propensity to ask did not seem to relate that much to their seniority as students. Some of the individuals were appropriated more comprehensively as information sources in specific matters. For instance, one of the students in the group had studied osteology and was almost immediately appropriated as an osteology specialist for the excavation similarly to how Armeno emerged as an undisputed authority in the identification of lithic materials.

Information seeking and not-seeking An aspect that makes archaeology a particularly fruitful empirical setting for exploring the dividing lines between information seeking and not-seeking is that as a whole, archaeology can be seen as a huge project of seeking and retrieving information about the human past from the archaeological stratum. A peculiar feature of archaeological fieldwork that distinguishes it from formal information retrieval tasks is that the contents of the 'database' (i.e. archaeological stratum) (Huvila & Widén-Wulff, 2006) are unknown to the investigators before it is literally unearthed and in contrast to many other everyday settings, the possibilities to delimit the retrieval task in progress are restricted. Also the questions guiding the information retrieval tend to be relatively open-ended even if specific research questions were formulated before the start of the investigation. This means that even if the questions would have a major influence on the focus and topic of research, they are conditioned or appropriated on the basis of a plethora situational factors (cf. Pourrez, 2016). Considering these characteristics of the studied empirical setting, it provides a potentially powerful context for exploring and exemplifying the oscillation of seeking and not-seeking in daily information work.

Both information seeking and not-seeking at the studied site were highly multimodal and embodied in the physical practices that afford the making and emergence of physical genres of information. Looking, tasting, listening, feeling, reading, asking and photographing were all enmeshed even if visual observation seemed to be privileged both in documenting (activity), and likely as a result of the use of photogrammetry, also in the resulting documentation (documents or information artefacts). For example, on Monday morning Tramezzino moved around with a group of students instructing them by answering questions, showing how to scrape the soil to make its features visible, how to draw markers, how to bag finds and explaining what kinds of finds would be important to keep. At the same time, the students were discussing with each other and working by themselves trying to follow the instructions. The primacy of the physical was underlined perhaps most visibly in Tramezzino's and Giaffer's constant efforts to market the advantages of photogrammetry to the students who tended to be much more enticed of the physical trench.

Even if archaeology would be an information seeking and documentation enterprise *par excellence*, the empirical work at the field-site showed that at the excavation itself, archaeologists might end up seeking very little information outside of the site and the project group. The project forms a small world but not necessarily in the negative sense documented by Chatman (1996). The archaeologists engaged in a highly effective process of juxtaposing and interrelating

multiple genres of information that enhance each other (cf. Heath & Luff, 2000, p. 190-191), including consulting multiple colleagues, paper-based and digital documentation and earlier excavation reports. In many cases the explicit seeking of information was driven by curiosity and involved several colleagues and a lot of speculation. Similarly to the journalists studied by Heath and Luff, also the archaeologists provided each other "selected renditions" of the contents of documents and things they knew and while discussing with each other, exposed information to colleagues that was otherwise "invisible or unavailable" to them (Heath & Luff, 2000, p. 101). Discussions led to information encountering but the encounters were far from being truly accidental in a context where the flow of discussion was constantly influenced by earlier remarks and comments and the context within which it took place, or as philosopher Wylie (2018) would frame it, by a scaffolding of earlier pre-understanding. Serendippo reflected on Tuesday afternoon the importance of his experience from rescue archaeology for his teaching, the many things the students need to learn from experienced archaeologists and how the earlier experiences of students are easily recognisable in how they ask questions and react to teachers' comments. Later the same afternoon a group of students was discussing what they remembered of lectures they had been attending together and discussed their experiences of participating excavations in different countries. Considering the observations in the light of the metaphor of a box within which we live in and which limits what and how much people can know about the world (Huvila, 2012a), it was apparent that the excavation formed such a box (or context) that limited and was used to limit the perimeters of available appropriable information and which was reshaped by occasional information seeking excursions to the outside world. A possible way of framing the box is to see it as an assemblage of Goffmanian (1974) frames that participate in making a situation. In practice, the process reminds of a series of pseudo-serendipitous encounters where archaeologists were constantly shifting between seeking and appropriating information and where the fluctuation between the modes of acquiring information, using it and making new information was scaffolded by their earlier information interactions. Both archaeologists and students were telling stories of their earlier experiences and relating them to what happened at the on-going excavation. Tramezzino remarked aptly on Wednesday morning how archaeologists tend to find what they are interested in: Iron Age specialists find Iron Age, Stone Age specialists Stone Age and so on to an extent that they may miss a lot that lies outside of their focus.

Making information useful Finally, the empirical data provides also insights into how the informational genres that are sought, encountered and created, are made useful and taken into use. As the description of the genres encountered at the site show, the usefulness of information can be roughly categorised to strategic, conceptual, situational and procedural following the categorisation of knowledge proposed by psychologists de Jong & Ferguson-Hessler (1996). The actual process of appropriating and making information

useful was scaffolded (Orlikowski, 2006) by the situation and the emergence, use, agency and temporalities (cf. Felt, 2017; Larkin, 2013) of particular infrastructures at the site. It was conditioned by the material realities of the site (e.g. the site hut was closer to one of the two trenches or that the week was very sunny which made it difficult to take photographs) and technologies used by the archaeologists to do their work (cf. for Haider and Sundin (2019) search engines determine that what is available for information searchers) but as much by immaterial standards or 'facts' (Iannacci, 2010) put to place by the national guidelines and scholarly practice in archaeology. At the same time, however, the information genres provided a scaffold that made the site intelligible by supporting and guiding action in diverse ways, for instance, in how site reports helped to structure the understanding of what is a proper investigation or how the stratigraphic units provided a structure to the otherwise unruly archaeological stratum. This happened both intra-site for work and information exchange during the excavation and inter-site for others coming to the information afterwards and from outside. From this perspective, the functioning of information genres can be compared to how Beynon-Davies (2015) describes lists (of identifiers) – a specific information genre – and how it functions both as an infrastructure, scaffolding and institutional object for actions of governance within an organisation (or community) and situation, and for actions of commerce (i.e. exchange) between situations and organisations (or communities).

Much of the appropriation built on analogies, especially when information was held uninscribed by colleagues. Experiences were compared with the situation at hand and fitted in the present context as procedural and strategic resources. The use of analogies did, however, apply also to other genres. The determining of stratigraphic units and interpretation of the contents of site reports was often based on a similar process where earlier documentation and experiences were compared to the present observations. This was constant but tended to intensify when there was a decision to make, when something new was discovered, or when a person participated in a particular discussion for the first time. While inspecting new finds on Wednesday morning, Serendippo and Armeno tried to reach a conclusion by drawing analogies of the differences and similarities in finds, and their documentation at the current and another site close by. Later the same afternoon when Michele, a colleague came to visit the site, the drawing of analogies between the current site and earlier experiences only intensified. The popularity of analogies contrasted especially with how seldom the group used metaphors to make information appropriable. The latter have been found to be common in cross-disciplinary collaborations and when hypotheses and solutions are borrowed from adjacent fields (Maasen & Weingart, 2000) — both being examples of cases when the collaborators tend lack a similar degree of common ground shared by the observed group.

As a whole, an analysis of the empirical data suggests that a key aspect in the process of how information becomes appropriable is wavering between the information, which is potentially appropriable, and the situation at hand within which the information is supposedly appropriated. As both the making and becoming of the genres (whether being personal reflections or photographs)

and their appropriation to information were based on developing analogies, (to a lesser extent) metaphors or blending and adapting earlier experiences to the situation at hand, appropriation unfolds as a central mechanism of both making information and making it useful. Essentially, it is a question of matching problem (Haas et al., 2015, cf.) between a piece of information and a situation. The relative openness (Frischmann, 2012), and even more so, accessibility of information through shared infrastructures is central to successful appropriation. In a relatively closed (if not entirely isolated) circuit, like an archaeological excavation, the wavering and the mutual scaffolding of the situation and information is achieved by comparisons by analogy rather than by metaphor.

Discussion

The aim of this article has been to open up the discussion on alternative modes of how information ends up being used by people and, in particular, to a explicate and explore a specific alternative conceptualisation of how this can happen without explicit conscious or accidental discovery of new information. The recent broadening of the focus of information research to be more sensitive and analytically attentive to the diversity of approaches to information interactions evince of a need of such perspectives. At the same time, the relative straightforwardness of framing seeking as a distinct activity of consequence could also provide at least a partial explanation to why information science research has been relatively uninterested in the more Gordian questions of information use both as a concept and an empirical phenomenon (e.g. Vakkari, 1997; Wilson, 2000; Savolainen, 2009; Huvila, 2015). With some caution, the similar reasons the anthropologist Leach (2004) sees as premises to the possessive understanding of creativity in the context of knowledge-making in Western imagination, could perhaps explain why it has been so long natural for Western information scientists to emphasise individual intellectual agency and thinginess of information rather than the role of objects and structures.

Situating situational appropriation

Situational appropriation can be compared to other conceptualisations of how information is taken into use. It is clearly situation and praxis rather than cognition or action oriented. It expects a certain level of agency in information, even if it focuses on what humans do rather than what, for instance, according to ANT (Latour, 2005), sociomaterial theorising (Orlikowski & Scott, 2008; Cecez-Kecmanovic et al., 2014) or mangle of practice (Pickering, 1995), information would do even if it sees, similarly to Andersen (2015), information as a central propeller of its use. Together with its affordances and propensities, information forms "potential trajectories or tendencies along which action can unfold" (Brown et al., 2014, p. 175) as Brown and colleagues suggests of material objects. The active role of information comes perhaps closest to that how Pickering (1995) sees the role of material things in the mangle of practice,

and how information foraging theory defines information scent (Lee & Pang, 2017) as something to which an information forager would react. Explicating situational appropriation should not end at the interface of information and its user but strive towards understanding praxes and, to paraphrase Latour (2014), phenomena that the information is trying to document.

As stressed earlier in this article, situational appropriation does not explain all information interactions. People still seek and encounter information and do many other things with it. It can bring balance to 'information determinism' (Srinivasan et al., 2017) although taken to an extreme, a situational determinism would be an equally undesirable alternative. It is important to acknowledge that simultaneously when situation makes information useful, it is also an outcome of the information that is appropriated much similarly to how Taylor (2009) stresses that communities are also outcomes instead being mere stages for action.

As suggested by Huvila (2015), situational appropriation can be classed as a positive rather than problematic phenomenon: "instead of framing (particular) information as a (relevant) answer to a specific question, the perspective opens information as a creative exploitable resource for addressing different types of questions in daily information work" (Huvila, 2015). It provides a rubbish theoretical (cf. Thompson, 1979) perspective to information by showing how information can decline in value after acquisition, even lose its function as information but suddenly become valuable again by turning to appropriable and becoming appropriated in a specific situation. There are many empirical examples of how noise can become information and vice versa (e.g. Bodard et al., 2016; Engeström, 2006). At the same time, however, it is important to be aware of and avoid immanent fallacies of positive'ism. There are still problems, and problems and questions may and do lead to that a particular piece of information is appropriated. There are also quite apparently limits to how information can be exploited. Not everything can or will become appropriable or appropriated. As Capurro (2003) has emphasised, it is not given that the messages we receive, are that easily turned to information (Hausmanninger, 2016) even if solving this particular issue has received increasing attention in the proliferating overflow of information.

Genres and situations

The central proposal put forward in the present study is that a genre approach could be useful in complementing the perspective of situational appropriation. If Andersen's (2008) proposition that genre defines an information need is extended to a case when there is no explicit information need, it could be suggested that genre of information defines, or at least influences, what becomes appropriable and appropriated in a situation. At the same time, it shifts focus from the being of information to how its made and to the process of its becoming. Following Miller (1984) and broadening the perspective from informational to social genres, also information seeking and situated appropriation can be seen as typified and recurrent forms of social action, or (social) genres. Similarly to how the organisation of knowledge and its related communicative actions (in-

cluding searching, arranging, sharing, archiving, ordering, tagging and listing and others) are for Andersen (2017a; 2017b), or "digital library is a genre" for Feinberg (2015), also the social phenomenon of situational appropriation can be considered as "a typified response to a particular social situation" (Feinberg, 2015). As Andersen (2017a) suggests in the context of knowledge organisation, conceptualising information seeking and situational appropriation as genres can help to deessentialise also them as being infrastructural rather than superstructural, and as means rather thans ends in relation to other goals. A closer look at the analysis of archaeological fieldwork earlier in this text shows that the described informational genres tended to come with typified social actions: how to select an excavation site and distinguish stratigraphic units, how to take photographs, how to work with reports and interact with colleagues. These acts that are leading to distinguishing of genres are themselves forms of informing (or mediation) as literature researcher Siskin (2016) suggests.

An obvious follow-up question is what happens at the nexus of different genres of information and information interactions. Devitt (1991) recognised, when studying the work of tax accountants, that particular sets of texts made them to do their work. She writes that "[i]n examining the genre set of a community, we are examining the community's situations, its recurring activities and relationships" and that the "genre set accomplishes its work", it "not only reflects the profession's situations; it may also help to define and stabilize" (Devitt, 1991) them. The analysis of archaeological work suggests of the same even if the continuum of defining and stabilising deeds of genres appear as a markedly fragile oscillation between fleeting stabilising and destabilising moments. Information genres interrelate to other genres (as for Siskin, 2016), come to being through a process of appropriation of earlier information and become appropriated as information in a situation. They are stabilised for a moment when information is made and it is taken (as in *information making* and *information taking*, Huvila, 2018) to wither away again in a continuous process of (re)appropriation of information where existing information (using the notion borrowed from Wylie) scaffolds new information and its (re)appropriation.

Another aspect highlighted in the empirical vignette as well as in the literature (e.g. Zuboff, 1988; Yamin, 1997; Olsson, 2016) on archaeological information work, is the multi-sensory nature of the informational genres archaeologists work with. The specific things, whether they are stratigraphic units or remarks made by colleagues, are appropriable and become appropriated in different ways, and in the essence, can comprise multiple informational genres. Beyond individual qualities of objects, including how they looked like, felt in hand or tasted, it was possible to sense traces of affective, or 'enchanted' qualities of objects Bennett (2010) has described as the vibrancy of things. Vibrancy, similarly to, for instance, inspiration (**?**) could constitute their own informational genres, both of which could be embedded in material, quasi- or immaterial things, together with other genres. Paraphrasing Goguen (1997), the relations of how different genres become accountable in relation to social settings and other genres, are not predetermined but depend on the constellation of what is appropriated, when, where, how and by whom. Being a knotwork of genres that scaffold (Wylie,

2018) each other, it is not surprising that it resists being reduced to simplified procedural workflows (Bødker, 2009; Huvila, 2018). This is also what makes situational appropriation difficult to explicate and the knowledge that plays out in the process as 'tacit'. However, rather than suggesting that it would be a question of a magical moment when something indescribable happen, I suggest that it is a very specific entanglement of social and informational genres and their continuous process of becoming. One way of understanding the trajectory of these (be)comings and coming-togethers of social and informational genres is to turn to Ingold's concept of correspondence (Ingold, 2017) and to see the individuals, their doings and informational genres as lines and the situational appropriation as a knot where they come together and answer, or co-respond (Ingold, 2017), to each other.

However, similarly to how situational appropriation do not explain all information interactions, genre does not account for all variation in how information becomes appropriated and similarly to how different technologies have been argued have different affordance potencies (Anderson & Robey, 2017), the genres can have different potency to influence appropriation. Genres also change. There has been a lot of speculation of how the digitalisation of archaeological information, or rather the introduction of digital genres in archaeological information can change how it is taken (and not taken) into use (Gunnarsson, 2018). The recent work of Haider and Sundin (2019) on the invisibility and ubiquity of search and search engines in the contemporary everyday life can provide useful openings to this direction by suggesting parallels of how digital (information) technologies in other contexts have become invisible and naturalised to a degree that they are neglected both by their users and the researchers of their users alike. Exploring into the processes and describing the paradata (i.e. data on processes cf. metadata) (Huvila, 2012b) on how information is taken into use beyond seeking and searching, and what factors, including and beyond genres, situations and infrastructures impact the information that is eventually there to use, are steps towards understanding the diversity of informational engagements.

Instead of suggesting that situational appropriation would be a substitute to earlier conceptualisations to how people acquire information, it is to be considered as a parallel mode of acquiring information, an antecendent to knowledge making (cf. e.g. Cole et al., 2015) and concurrent to other information activities. It has undoubtedly its own temporalities (cf. Savolainen, 2018) with implications to knowledge-making (Felt, 2017) even if they are not determined by a seeking process but rather by another parallel process of becoming that is familiar with information to a degree and which makes it 'appropriable' in an emerging situation.

Conclusions

The aim of this text has been to discuss how, in addition to being sought and acquired, existing information is also made useful and taken into use in the

course of information work. The present article has proposed that this type of not-seeking of information for use can be conceptualised by building on a combination of Huvila's notion of situational appropriation (2015) and Andersen's (2008; 2017a) genre-based approach. Building on Andersen's thesis that genres determine information needs, this article suggests that information becomes appropriable, and appropriated when informational and social genres intertwine with each other in a continuous process of (re)appropriation of information where existing information scaffolds new information and the on-going process of appropriation itself. Information is stabilised only in the fleeting moments of information making and information taking (Huvila, 2018) to dissolve again. Situational appropriation does not explain all information interactions but as the empirical vignette illustrates, it provides a potentially powerful conceptualisation for explicating information interactions, which have received little attention in traditional models and theories of human information behaviour.

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