A fieldwork manual as a regulatory device: Instructing, prescribing and describing documentation work

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Abstract

Research on how archaeological fieldwork manuals, a sub-category of methods handbooks, regulate research documentation is limited. Qualitative content analysis of 25 English-language archaeological field manuals from the early 1900s to 2010s showed that they instruct how to describe the documentation work, prescribe practices and workflows, and function as often pre-coordinated descriptions of work. A manual forms a 'working space' that is sometimes adopted as such by following the detailed advice given in some of the texts but likely more often used as a more general point of reference. The fact that many manuals do not provide exact recipes for the fieldwork as a whole means that they function as comprehensive representations and documentation (paradata) of actual fieldwork practices only when read in parallel with field documentation.

Keywords

Archaeology; documentation; field manual; paradata

1. Introduction

The systematicity of how researchers document their work and its results is one of the cornerstones of the rigour of the scholarly enterprise. It is produced through multiple types of regulatory interventions. Some of them, for example, policies and guidelines, methodological best practices, conventions and disciplinary methodological idiosyncrasies, determine how work is expected to be done. Others, including documentation tools, templates and forms, and contextual conditions when documentation work takes place, regulate how it can be done in practice. Besides the documentation work itself, the regulatory interventions and devices enacting them influence the documentary residues (i.e. documents) of scholarly work and its results. This is a topic with obvious interest in information science research. So far, it has been investigated less exceptions, for example, [1–4] than the regulation of scholarly and scientific work that has attracted quite a lot of attention, especially in science and technology studies [5–9]. One particularly little-studied form of regulatory device common to a broad range of disciplines is the methods handbook [10]. A specific sub-category in this genre is the fieldwork manual used in field sciences to regulate research and data collection 'in field', that is in a naturalistic setting, outside of laboratories [11].

The aim of this study is to provide new knowledge on how methods literature – and more specifically fieldwork manuals – regulate and inform documentation work. The study does it by analysing a set of archaeological field manuals and how they instruct field archaeologists to work and document their doings. The new insights generated through the analysis help to understand documentation-related methods literature as an information genre, its influence on documentation and information creation, the resulting information, and documents. The research questions addressed are (RQ1) what

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different approaches field manuals take to regulate archaeological field documentation and how it is documented, (RQ2) how fieldwork manuals position themselves as regulatory devices of archaeological documentation work in terms of their purposes, actors, audiences and in relation to each other and (RQ3) if the instructions in field manuals were followed, what kind of paradata (data about processes, cf. [12]) on archaeological documentation work would be produced.

The study connects with and extends earlier studies of scholarly and archaeological information work, behaviour and practices incl. [11,13,14] and, more specifically, those relating to information and document creation [15] and documentation [16,17]. In the following, we refer to documentation practices when discussing (constellations of) acts of documenting various aspects of archaeological work and its results and to documentation work as the constellation of documentation practices that form the work of archaeological documentation as a whole (on the concept of work in information research [18]). Simultaneously, this article extends earlier research on documents and their social regulatory functions [19,20].

2. Literature review

2.1. Documentation of archaeological fieldwork

A fundamental aspect of archaeological field documentation is to produce an 'archive' that documents not only findings and observations but also the work process [21]. Like field documentation as a whole, the preferred extent and specifics of documenting work processes have varied following contemporary ideals and perceived aims of fieldwork at different times. The aims have shifted from focusing on retrieving aesthetically pleasing, and later culturally representative, objects [22] to, more recently, 'data' [23] for collections and analysis. Similarly, the earlier focus on collection-building and long-term off-site preservation has been supplemented with an increasing interest in onsite interpretation and knowledge production [24]. A long-lasting debate on archaeological documentation concerns to what extent work procedures and outputs should be standardised and how much flexibility should be allowed [25].

The basic tenets of documenting the archaeological work process [26,27] parallel in rough terms with the credo in other field sciences [28] but also those in laboratory work [29]. As in field sciences in general, a traditional key instrument for documenting decisions and activities in archaeological fieldwork is a personal notebook or diary [30,31]. Earlier, notebooks were often the only written documentation produced, and they were kept by senior archaeologists only. Like fieldwork and its documentation as a whole [32], diaries and notebooks in archaeology and other field disciplines come historically, regionally, paradigmatically and project-wise in many different forms. Conventionally, they consist of written notes, sketches and diagrams [28,30], but there are also examples of video diaries and purely textual ones [33,34]. Also, the content of notebooks and diaries ranges from the duplication of formal documentation to personal reflections, descriptions of life on the field site, and methodological notes [35].

The formalisation of archaeological field documentation has diminished the role of notebooks and diaries. However, the recent archaeological discourse, especially the reflexive archaeology movement, has again emphasised the relevance of reflective written notes and sketches as a complement to pro forma documentation [30]. As Binford notes, 'factual knowledge, or knowledge claims regarding properties of the archaeological record are always contemporary with the observation-documentation event' whereas a narrative has a better capacity to traverse space and time (p. 9) [36]. Reflexive archaeology has also advocated for the benefits of capturing views from the whole team – including students and technicians – even if their interest in participating in documentation work [34] and the practical usefulness of less experienced team members' reflections has been sometimes questioned [35,37].

Both traditional notebooks and diaries produced according to the ideals of reflexive archaeology have received their fair share of critique for their lack of consistency, the overlap between other documentation and the unclarities to what degree they contribute substantial relevant information to archaeological knowledge production. However, in spite of occasional criticism, diaries and diary-like note-taking that combines written text, diagrams and sketches have been broadly acknowledged as useful, especially in narrating and illustrating excavation and interpretation processes [30,31,35].

In addition to diaries and notebooks, traces of the work process can be found throughout the archaeological documentation material [38]. Even if pro forma sheets have been argued to be relatively void of processual information and reflection, this is not always the case [30]. Also, a project report can contain such information in procedural narratives, descriptions of methods, tools, actors and actants present at the fieldsite, photographs and information sources used in the work and report writing, diagrams and drawings and in the description of the outcomes of the project [4]. In addition, such information can be found in documentation material used in report writing but not included in the report document itself [39]. This material ranges from additional photographs and drawings – including overview and action shots taken of the site and work process (p. 82, p. 292) [40,41] – to documentation written on article forms and in a field database

[42]. Much of this information is intrinsic in the sense that it is embodied in and 'inherent to the material, structure, or constitution' (p. 37) [43], of the documentation as a whole [4]. Some metadata and documentation standards both within archaeology and in other disciplines contain explicit elements for documenting documentation work. The standards also incorporate implicit means to represent such information [44]. However, as with the documenting of methodology [45], the presence and extents of guidelines in the standards on how to do so vary considerably [46].

Archaeological fieldwork documentation, like scholarly documentation in general, has digitalised rapidly around and after the turn of the millennium. Digital documentation is typically linked to efficiency, increased speed, accuracy and standardisation [47,48]. Apart from being criticised for being slow, arbitrary, less efficient and accurate, traditional note-taking using pen and article has also been suggested to have advantages. It allows for greater flexibility, the possibility to modify documentation and categories on the fly, and, for example, to annotate it with in-text and in-margin notes [49]. In parallel to a maturing critique of the most optimistic expectations of the positive impact of digitalisation and standar-disation [50–52], it has also become increasingly apparent that variability in scholarly documentation is informative also in its own right. Inconsistencies in both digital and non-digital documentation provide evidence of science-on-the-making and the documentation work itself [46,47].

2.2. Instruction and field manuals

Much of the earlier research on scholarly and professional instruction and field manuals has been conducted outside of information science. Many studies have focused on the usability and perceived complexity of different forms and for-mats of communication [53,54] and on problems of translating instructions [55] rather than on manuals as an informa-tion source.

Similar to how digitalisation has radically changed documentation in archaeology and other field sciences, it has also affected instructional literature. In many fields, technical guidebooks have turned digital and incorporate or consist of videos and multimedia content. Some communities have been slower to adopt multimedia information sources [56]. In contrast to the general preference of multimodal information in archaeology [57], multimedia field guides have been rather rare so far. However, the large number of excavation technique-themed YouTube videos probably show the way to the future.

Scholarly guidebooks and manuals represent distinct genres of texts akin to each other that – as Lucas (p. 159) [58] writes about different types of archaeological texts – situate and make knowledge move in particular ways. They are a part of how disciplinary competence is passed on, obtained and perpetuated [59]. Like textbooks, they emerge from a dis-tinct culture [60] and a particular system of conducting work in a domain (see, for example, Roskams' [61] comments of [62]). The purpose of them all is to standardise researchers' work, set minimum requirements for its outputs [47,63] and improve the quality of the collected 'data' (p. 128) [63]. Their role is to provide a description of a performative sequence to follow [58] and to intervene in researchers' work by pushing it in the desired direction.

Even if scholarly guidebooks and manuals can reveal a lot of what is taken for granted in a particular domain [64], they are essentially practical. In archaeology, Buccellati [40] (p. 35) has criticised a relative dearth of reflective work between theoretical texts and practical guidebooks on theoretical aspects of fieldwork has been criticised. The theoretical-practical debate on the pros and cons of reflexive archaeological methods is one of the most visible excep-tions [65,66].

The history of modern archaeological field manuals dates back approximately a century [27]. In contrast to excavation manuals, there are very few archaeological laboratory manuals (for a partial list, [67]) and manuals that would cover post-excavation work [68,69]. The intended audience of field manuals varies and ranges from professionals to students [70,71] and the general public [72]. The first field manuals were written primarily for field directors who were at the time not only responsible for the documentation but also the ones who did it in practice. In contrast, today, most of the manuals are written almost exclusively for excavators [27] and students. This change of focus reflects a shift from rely-ing on unskilled labour to using a trained workforce on archaeological excavations in the mid-1900s [27]. It also parallels the earlier discussed change in how archaeological fieldwork has professionalised; it has become increasingly regulated [73,74] and turned into a team effort [34,75,76]. The revisions between editions of long-running texts and how fieldwork is framed in new manuals also reflect in more general terms the evolution of archaeological fieldwork and its priorities throughout the 20th century [27].

Field manuals differ in certain crucial aspects from textbooks. Textbooks are not even, in theory, meant to be taken to the field [64] and function as recipes for how to do the work. They are rather – as Lucas [58] (p. 139) characterises them – 'the locus classicus of method in any discipline'. Instead of merely reading a textbook, a better way to learn a method is to apply it in practice [58]. Also, besides doubling as a professional guideline and student manual, a textbook serves a more fundamental purpose than a field manual by introducing and establishing the methodological palette of a particular

discipline. They are central to interdisciplinary work, especially for the construction and circulation of hybrid theories and practices. In Rheinberger's [77] terms, they function as sites for fashioning knowledge that can be shared at a meso-level [78] between disciplinary and sub-disciplinary contexts.

The literature has also found limitations in field manuals. Instead of a systematic assessment of the manuals as a whole [79], their critique is usually focused on criticising documentation, interpretations, individual methods and their implications [80,81]. Critique is also directed to what is described in and left out of the texts [82–84] and on what level of detail the different aspects of fieldwork are prescribed [16] in relation to what critics consider as central to archaeological field practice [85,86]. In a broader scope, feminist research has criticised field manual literature for gender bias [87]. Manuals have also been condemned both for being too general [64] and too detailed [88,89] and for being too specific to individual projects, approaches and contexts [82,90] to be generally useful. Another fundamental common flaw found in instruction manuals and methodological descriptions is that they never fully describe a practice [91,92] they are outlining. The practices described in the manuals tend to relies on the overall 'quiddity' [93] of the in-between procedures that reconcile between rules and what is done in practice [94].

Critics have also pointed out that methodological standards are not followed consistently and evenly [95]. However, relying on field manuals can raise the possibility of leading to over-routinisation of complex work tasks. For example, Roskams [61] criticises his colleagues in the archaeology of 'manual worship', that is, attempting to do everything 'by the book' rather than according to what would be appropriate in a given situation.

3. Theory

Theoretically, the analysis of the material sampled for the present study directed attention to how the manuals – both individually and collectively as a literary informational genre [96] – function as regulatory devices and appeared each to frame a particular kind of 'space' for archaeological fieldwork. Earlier research provides a plethora of examples of how technologies, documents and other material and conceptual artefacts – including sequences of instructions such as programming code [97] – govern and regulate sociomaterial action and how governance can be built into them [98,99]. The mode of regulation can be relational [100] if embedded in the social context and practices, or formal through explicit directions given in the manuals. As an instrument for regulating fieldwork, a field manual is infrastructural in how it provides a supportive substructure for conducting, describing and reproducing archaeological fieldwork in a particular manner.

Through functioning as a regulating infrastructure, a field manual also forms a particular space of action for a distinct type of ecology of practices [59,101] it underpins. Belhoste [102] describes a scientific or scholarly working space as a dispositif that 'implies a sense of situation' (p. 252). It is a network or system of social, material, and epistemological resources, interactions and relations. A working space is a product of collective actions rather than a physical location [102,103]. It is enacted by a routine and the work that a particular routine takes to establish [104]. A working space can function as an infrastructure for a community of practice – a notion frequently used to characterise archaeological fieldwork teams [105,106]. However, Belhoste [102] suggests further that a critical ability for successful scholars is their ability to create personal working spaces that support their scholarly efforts.

On a broader scale, manuals describe a model for broader intellectual frames of archaeological knowledge production that can be conceptualised using the notion of epistemic living space introduced by Felt [107]. It refers to 'perceptions and narrative re-constructions of the structures, contexts, rationales, actors and values which mould, guide and delimit' researchers' 'potential actions, both in what they aim to know as well as in how they act in social contexts in science and beyond' [108] (p. 136). Acting and learning in the epistemic living space can be explained further in terms of dwelling and enskilment. Ingold [109] uses this pair of concepts to refer to people's active engagement with their surroundings, living and acting in a context rather than of or towards it, and learning through a mechanism of understanding in practices that resemble enculturation rather than transmission.

Finally, one further aspect of field manuals is how they function as (shared) points of reference [110] or, as noted earlier, in Lucas' [58] (p. 139) words, loci classici, of and for methods and procedures. A popular field manual describes and establishes a set of procedures as routine work with its own dynamics of change and stability [104]. As such, a manual reconciles academic and artisanal knowledge [111] of doing fieldwork and, through apprenticeship, becomes anchored and constructed as a part of a local practice [112]. At the same time, they form a centre-point of a practice community or context [113] from where the epistemic distance [114] to it and its outcomes is measured.

4. Methods and material

In order to answer the three research questions presented in the introduction and to add to the knowledge on the regulation of scholarly and scientific work and the especially little-researched topic of the role of methods literature, this study analysed a set of 25 archaeological field manuals (Supplemental Appendix 1). In the reporting, each analysed manual is referred to using a code composed of three first letters of the first author of the manual, or an acronym of the manual title if no authors have been specified, and the year of the publication of the manual. The research questions focused on the different approaches field manuals take to regulate archaeological field documentation and how it is documented, how fieldwork manuals position themselves as regulatory devices of archaeological documentation work in terms of their purposes, actors, audiences and in relation to each other, and if the instructions in field manuals were followed, what kind of paradata on archaeological documentation work would be produced.

The manuals represent a sample of English-language archaeological field manuals published from the early 20th century to the early 21st century. The analysed corpus was sampled for temporal, thematic and geographical coverage that would help to identify the development of the manual genre from pre-digital to digital documentation, differences and similarities between geographic areas, generic, regional and project-specific manuals with different thematic emphases. The starting point for sampling was Caraher's [115] survey of excavation manuals available online. The list was complemented by texts identified by following citations and by searching for field manuals and excavations manuals online and in library databases of three major Swedish, Finnish and Canadian research universities. The final selection of manuals was based on their reasonable geographic, thematic and temporal spread, and availability. The sample is non-systematic but is argued to be broad enough to provide a reasonable insight into the variation of how archaeological field manuals discuss the documentation of documentation activities.

The analysed manuals differ from each other in various respects. Besides the long temporal span, they are also written for different types of audiences. To exemplify, MCG2008 is a supervisor's manual, HAM1963 and HRB2008 are for non-professional archaeologists, SEM2004 is a manual for students working on a particular excavation project, and USF1985 'summarizes major aspects of managing cu[l]tural resources under the U.S. Fish and Wildlife Service (Service) jurisdiction'.

The main author of this article used NVIVO R1 for an initial coding of the full texts of the manuals included in the analysis. After initial open coding, the analysis continued using close reading [116] of manuals, writing summaries of categories and developing them further by using writing as an explicit method of inquiry [117]. Six months after the initial analysis, the categorisation was revisited using negative case analysis [118] with the specific purpose of finding contradictory evidence that would decrease the reliability of the findings. The analysis focused on the sections with explicit relevance to the research questions.

5. Analysis

The analysis focused on deducing categories of strategies that explain how manuals regulate and inform documentation work by analysing a set of archaeological field manuals and how they instruct field archaeologists to work and document their doings. Concerning the different approaches field manuals take to regulate archaeological field documentation, and how it is documented, the analysis identified three major strategies of instructing, prescribing and describing documentation work. The analysis of how fieldwork manuals position themselves as regulatory devices focused on explicating the purposes, actors and audiences of documenting documentation work articulated in the analysed manuals and the citations between manuals.

5.1. Description versus prescription

The analysed manuals employ three parallel strategies to expedite documentation of archaeological practices. They encourage and instruct how to describe the documentation work, prescribe practices and workflows by describing how archaeological documentation should be conducted, and function as often pre-coordinated descriptions of how work was (supposedly) done. The analysed manuals refer to the documentation and the documented archaeological practice in somewhat varying terms ranging from a fairly formal conceptualisation of work and work processes to messier notions. For example, LUC2003 describes archaeological work in terms of 'procedures' (p. 4) and a 'process' (p. 4, 10), whereas SEM2004 (Section 7.2.1) describes excavation as 'a cross between an art and a science'.

5.1.1. Manuals instructing documentation work. Even if the importance of documenting both the investigation process and its results is readily acknowledged across archaeological literature, including the field manuals, the analysed texts are

relatively sparse in explicit advice on how to document archaeological work and documentation practices. Only a few manuals like SAN2017 elaborate in detail on the rationale of such accounts, how to write them and, for example, how to distinguish later notes from the ones written during action. Simultaneously, however, many manuals contain occasional detailed instructions on describing specific details of the process, apparently those that are considered especially important by their authors (e.g. JOU1980 on field notebooks on p. 91; WES1994 on dendrochronological sampling). Somewhat counter-intuitively, for example, when DEV1978 (p. 74) lists three functions of archaeological recording systems, they do not comprise a description of how the work was done. Others, including RCA2011, do not refer explicitly to the documentation of how the documentation was produced at all. In contrast, for example, OSP2007 notes that '[t]he Guidelines also stress the need for clear and improved communication about archaeological expectations, methods, findings, value, and relevance' (p. 6). JAC2005 contains one of the most exhaustive instructions on what to document and how. A process description consists of a documentation of the location, size and shape of the investigated trench, external factors influencing the process, who is doing what and where and what has been done since the last notes were taken, what problems have been encountered and how they have been solved, what types of artefacts are emerging and what is their dating, what kinds of records and samples are taken, and how the work deviates from standard procedures. In addition JAC2005 instructs to draw progressive sketches and to document any staff-related issues of consequence such as accidents or incidents.

Even if the instructions regarding the documentation of documentation remain scarce, almost all analysed manuals contain at least some explicit and implicit advice on describing work and its different facets and elements. Some of the guides (e.g. WOR2019) instruct archaeologists to submit a plan that is 'sufficiently clear about objectives, methods, standards, resources and timetable to form a standard against which delivery of the project will be monitored' (p. 9) before conducting the work.

A part of the manual instructs to provide an account of the work. Some pieces of advice remain fairly generic. For example, ANF2005 instructs us to provide 'a good description of the project and project area' (p. 33). Besides (textual) accounts, some of the manuals also refer to photographs as a source of information about the conditions and procedures of fieldwork (e.g. WES1994, SEM2004, MCG2008 and WOR2019). MCG2008 instructs to combine 'informal working shots' ideally with people's faces showing 'with meticulously cleaned and prepared record photos' (p. 8). Accounts of work are not, however, necessarily considered mandatory. DRO1915 notes that 'it might be useful to secure an account of the work' (p. 30). Similarly, it is not always entirely clear to what extent such recommendations refer to documenting the work and to what extent it results. For instance, in HAM1963, the references to documenting 'the history of the excavation of [one's] own trench' (p. 82) in a notebook do not necessarily refer to providing a narrative of what was done but rather a description of what was found. Similarly, when HAM1963 (p. 94 and 97) instructs to describe reasons for taking a photograph, it does not refer to a narrative but rather to explaining the scale and ensuring that the object of the photograph is both visible and 'obvious' (p. 97) in the image.

A parallel approach to documenting work and documentation is to provide a reference to a method used in the process. For example, BIR2010 instructs to name the 'method of excavation' whereas ANF2005 instructs to provide a (brief) description of methods employed, and similarly to USF1985, GIV2003 a 'full account of the methodology in the notebook and include it in the end-of-season report' (p. 12). However, in BIR2010, this information is clearly considered as optional similar to such information as the percentage investigated, dating and a sketch of the excavated feature. It is not stated as being required or even required-when-appropriate.

Finally, multiple manuals instruct to document to a varying degree elements, premises and conditions of documentation work. The most typical paradata-like data mentioned were descriptions of work, where/extents (time and place of work), by whom (most often initials; credentials were mentioned typically in conjunction with different roles rather than to be used all over the documentation – they can, of course, be assumed to be available somewhere in the final report anyway), and to a certain extent, why (reasons for doing specific things, research questions). The specificity of such instructions varies from generic remarks 'a good description of the project and project area' (ANF2005), to brief discussions of the advantages of keeping a day-book (DRO1915) and detailed instructions of how long a particular description should be (MCG2008).

As a whole, while a part of the manuals emphasise an explicit description of how work was done, many others do not. When such documentation is not explicitly mentioned, process descriptions can still be implicitly present in, for instance, how the manuals underline the importance of documenting the stratigraphic sequence and by describing when (date) and by whom (initials) different features were documented (e.g. WES1994, CCA2001, SEM2004 and BIR2010).

5.1.2. Manuals as prescriptive norms and guidelines. An obvious explanation to the lack of emphasis on documentation in the analysed manuals is that they, like the field manual genre as a whole, are emphatically prescriptive by their nature.

The prescriptiveness applies especially to the site, project and administration-specific texts (e.g. BAD1934, BLA1980, TG2006 and SEM2004) but is apparent to varying extents in more generic manuals as well. When a manual describes a specific work procedure and expects it to be followed, it is less interesting and necessary to describe in detail how to post hoc reproduce the description.

The particular types of prescriptive ambitions of manuals become evident often already in the introductory chapters (e.g. OSP2007). HC2012 describes that

> [t]he Standards are intended for use by all those involved in the planning process and land management – to inform planners and developers of the specific requirements of a particular piece of archaeological work and to ensure historic environment practitioners conduct fieldwork to an acceptable and consistent standard. (HC2012, p. 2)

In addition to stressing that the manual itself is a binding standard of how work should be done (in the future) to ensure its quality (e.g. DRO1915, p. x), the texts highlight how they are descriptions of how archaeological work was done (in the past) during a specific expedition (e.g. BAD1934, p. vii; BLA1980, p. 4). While site and project-specific manuals tend to describe the only allowed approach to fieldwork, regional manuals can be less strict. Even they are typically underlining the importance to follow procedures documented in 'a' manual. WOR2019 directs to

> [u]se an industry-standard site recording system compatible with other single-context recording systems which are currently used in Worcestershire. This should be fully documented in a manual. No alternative recording system may be adopted without the prior agreement of the LPA Historic Environment Advisor. (WOR2019, p. 17)

5.1.3. Manuals as descriptions. In parallel to functioning as prescriptive or instructive accounts of permissible work procedures, some of the manuals position themselves explicitly as compendiums of archaeological field reports. However, rather than being narratives of doings as they have occurred, the manuals are amalgamations of ex-ante and post hoc accounts of what was planned and perceived to happen. In effect, they end up stipulating how documentation is or was expected to be conducted at a particular site or region by providing a prescriptive account written in the form of a description of how the work was supposedly done. One of the reports describes how there has previously been a 'great dearth of authoritative and detailed published descriptions of techniques employed in excavation' (BAD1934, p. 7; also BLA1980, p. 4) and how 'students of archae[o]logical reports will desire information on the methods employed' (BAD1934, p. 9; also BLA1980, p. 4), that is procedural descriptions that can be read in parallel with archaeological reports. Consequently, it is suggested the reporting should follow the pre-written description. HC2012 notes that reporting should 'refer directly to [...] Standards [described in the manual] and [make sure] that work will be undertaken in compliance with them, unless specifically excluded in the specification' (p. 45), suggesting that only deviations of the pre-described procedures are relevant to describe post hoc in significant detail.

5.2. Field manuals as a genre

On the basis of the analysed material, the field manual genre is far from homogeneous. A part of the analysed texts provides in-depth narratives of the principles of fieldwork (e.g. JOU1980 and DEV1978), whereas others (e.g. WES1994, LUC2003, RCA2011, VDH2011 and WOR2019) are focused on giving straightforward technical advice. Also, the scope of the manuals ranges from instructing the actual digging and field documentation to include project management, practical advice (e.g. '[t]he most important member of the party is the cook', SEL53 p. 10), and site-specific information. A closer inquiry, reported in the following section, into actors (how manuals position themselves to who does the job, that is produces documentation and who is responsible), audiences (for whom the manuals have been written), purposes (why documentation of documentation work is needed) and cross-references between manuals (how the manuals relate to other manuals) shows comparable variation.

5.2.1. Actors and audiences. Most of the analysed manuals do not make explicit references to actors or audiences: for whom the manual is written, who are responsible for documentation work at an excavation and who are considered to be its primary audience. An often implicit assumption of professional archaeologists and students as the principal audience of both manuals and documentation is discernible in many of the analysed texts. BAD1934 refers to 'educated reader' (p. vii), while DRO1915 and MCG2008 are written for field directors or supervisors. LUC2003 refers to 'You' (p. 6) as being anyone working at an Icelandic Institute of Archaeology excavation. This reminds us of many project-specific manuals even if their either explicit or implicit target group tends to be students and other first-timers (e.g.

GIV2003, SEM2004 and SAN2017) rather than a generic 'you' (e.g. TCG06 and MCG2008). In manuals that function as sanctioned guidelines (e.g. HC2012, JAC2005 and ANF2005), an additional recurrent audience is their warranting authority, whether it is a local heritage agency or a field school director. HAM1963 and HRB2008 differ from the rest by being manuals for non-professional archaeologists. A motif that goes through all the analysed manuals with varying degrees of explicitness is familiarity with archaeological work and its documentation expected of their readers. This is most explicit in manuals that hardly discuss the documentation of documentation work at all (e.g. DRO1915, BAD1934 and RCA2011) but also in others where documentation is discussed (e.g. JOU1980, ANF2005 and SAN2017) but practical instructions often remain rather rudimentary.

In archaeological practice, if not specifically discussed, the decisions and responsibility fall conventionally on the director of the investigation [27,119]. BLA1980 (p. 73) describes this explicitly by noting that a senior archaeologist is supposed to check the quality of documentation and work after a day by looking at the completeness of documentation and the completeness and accuracy of the top-level plan of excavation. ANF2005 (p. 17) advises that the principal investigator 'needs to monitor all stages of archaeological work'. BAD1934 (p. 43) notes further that the director of the expedition is responsible (also) for improving excavation methods, 'to make' excavation 'as cooperative an undertaking as possible'. When discussing sieving, BLA1980 (p. 25) refers to decisions on choosing what methods and techniques to use, when and in which conditions, as a question of maintaining a 'balance between the amount of data that can be recovered and the amount of time and effort involved'. Considering the central role of directors, it is interesting that the author of one of the early manuals (DRO1915, p. x) admits that he has never been in charge of an excavation.

While the earlier manuals tend to frame field directors and supervisors as prime actors (e.g. DRO1915, BAD1934, JOU1980 and partly BLA1980) and task them with the responsibility of quality assurance, the more recent texts refer to a broader group of actors when discussing quality and responsibilities. In general, reporting the names or at least initials in documentation forms is a standard procedure in manuals describing a pro forma documentation approach (incl. SEL53, JOU1980 and WES1994). Some manuals underline the need to list all personnel involved (e.g. SAN2017 and ANF2005), while others are less explicit about whose names need to be reported. CCA2001, ANF2005 and BIR2010 refer to the importance of professional standards. ANF2005 emphasises further the need to make good use of standardised documentation forms and 'appropriate specialists' (p. 17). CCA2001 notes that '[t]he lab director and other field personnel should be consulted when questions arise' (p. 1), whereas BLA1980 stresses that archaeologists and educators need to educate each other (p. 109). GIV2003 underlines the need to audit all data by 'someone other than the recorder or enterer' (p. 5). HC2012, a regional standard for archaeological work, refers unsurprisingly to the heritage authority as a body to consult and a guarantor of documentation quality.

Even if the more recent manuals broaden the view of actorship beyond individuals directing the investigation on site, it is obvious from the texts that the team and who leads it are still considered as the main actors responsible for documentation and its quality. In this respect, the primacy of field directors is still in effect. OSP2007 and USF1985 underline the continuing significance of their role also by rendering them as responsible for developing methods. Field directors are explicitly encouraged to reflect and report on the utility of guidelines and investigation techniques.

5.2.2. Purposes of documentation. A parallel question to how the manuals instruct to document documentation work and follow a prescribed procedure is: what is the purpose of descriptive and prescriptive documentation? BAD1934 suggests that its purpose is to 'afford[] the opportunity to see how the evidence has been gathered and to form his own opinion of the historical verdict' (p. vii). Also, DEV1978 focuses on the evidentiality of documentation by referring to the importance of 'accurate recording of information from which a reliable synthesis can later be constructed' (p. 81). JAC2005 provides a more explicit explanation of the purpose of recording forms as the 'raw record' and fieldnotes as documentation of actions and observations and site for making and testing interpretations. USF1985 adds how '[e]xplicit descriptive statements of and justification for field study techniques are important to provide a means of evaluating results' (p. 22). DRO1915 notes further that documenting can also serve the purpose of directing the documenter to reflect on observations and whether they have been properly documented.

In addition to providing instructions on how to document and eliciting reasons for how documentation is expected to be useful, some manuals also make remarks on approaches and description types to avoid. DRO1915 is critical of writing daily summaries of work as a complement to individual notes because of their scant supplementary value. GIV2003 discourages free-text comments in databases because the data is difficult to retrieve and analyse. Also, HAM1963 warns against superfluous documentation beyond a 'record is the nature of his finds and their relationships to each other and to the entire excavation' (p. 81), whereas HRB2008 is less strict and encourages adding any information considered relevant; however, in an appendix rather than on the documentation forms. These occasional remarks are reasonable to interpret primarily as complementary to positive advice. At the same time, however, they point to two partly conflicting

ideals of producing concise and efficient documentation (DRO1915, HAM1963 and GIV2003) that is cost-effective to produce, retrieve and use, and of the completeness of the record (HRB2008).

5.2.3. Cross-references between manuals. Even if a comprehensive genealogy and history of the archaeological field manual literature are beyond the scope of this study, the explicit cross-references in the analysed manuals to other manual texts and standards provide interesting additional cues to how the analysed texts frame their and other manuals' scope.

As a whole, only a handful of manuals make explicit references to other texts, even if implicit continuity in the evolution of archaeological field techniques from the first manuals to the latest ones is very apparent. The Corinth project-specific SAN2017 is a special case. It acknowledges multiple manuals, including DEV1978 and WES1994, Barker's Techniques of Archaeological Excavation [120], and Harris' [121] Principles of Archaeological Stratigraphy. Instead of referring to other manuals, the regional WOR2019 claims explicit consistency with multiple European and British policy standards and guidelines mentioned in the introduction to the text. LUC2003 does not refer to earlier texts but acknowledges that it is based on the single-context recording system developed in the United Kingdom. The standard reference to the approach is WES1994 and its earlier and later versions. In contrast to most of the references, MCG2008 is specific in referring to LUC2003 (FSI, i.e. the Archaeological Institute of Iceland field manual) as 'to provide the best practice standard for most specific field problems' (p. 2).

Unsurprisingly, multiple manuals also refer to earlier versions of the manual itself (e.g. LUC2003 and VDH2011), earlier manuals used at the same site (e.g. TG2006) and specific manuals that are considered to function as useful additional references in particular aspects of the fieldwork and documentation (e.g. MCG2008 and VDH2011).

6. Discussion

6.1. Regulatory approaches: instruction, prescription and description

The first research question of this study (RQ1) asks what different approaches field manuals take to regulate archaeological field documentation and how it is documented. The analysis identified three different approaches: instruction, prescription and description. While being distinct in an analytical sense, usually, the individual manuals cannot be assigned exclusively to one category only. While, for example, JAC2005 is a prescriptive account of how archaeology is supposed to be conducted at Port Arthur (Australia), it is hardly very far-fetched to assume that it is at least roughly accurate also as a description of archaeological work at the site.

Even if the approaches are not directly tied to the age of the analysed manuals, the number of prescriptive texts is higher among the more recent ones, whereas the older ones tend to lean towards instructing fellow fieldworkers. There is also a parallel shift from guidebook-like manuals to sanctioned guidelines, and from the perspective of their regulatory modes of operation, from emphasis on relational to formal authority. Neither of the changes is unsurprising considering the general professionalisation [73,74] and increased regulation [122] of archaeological fieldwork around the world and the general evolution of professional work to an increasingly specialised, standardised and distributed activity based on accountability rather than professional judgement [123,124]. The prescriptive texts also lean towards conceptualising archaeological documentation as a process (e.g. WES1994, GIV2003, JAC2005 and VDH2011) with references to fitting conceptualisations such as flowcharts (e.g. BLA1980, WES1994 and JAC2005), rather than a craft-like assemblage of procedures (e.g. DRO1915 and BAD1934).

6.2. Framing a fieldwork manual as an instrument for documenting and regulating documentation work

In parallel to how the popularity of the three identified regulatory approaches in field manuals has changed, the field manual as an instrument for documenting and regulating archaeological documentation work (as per RQ2) has evolved over time. However, considering the manual genre as a whole, both the manuals and the methods they describe show remarkable stability. As with work routines and routine work in general [104], a comparison of the analysed texts shows that their principal point of diversity is the variety of proposed approaches put forward in the manuals rather than how they change over time.

Independent of how a field manual is written, it embodies a documentation ideal [125] it espouses and aims to perpetuate by instructing, prescribing and describing how to document and how not to document. The idea also explains what is described in the manual and on what level of detail [16]. This varies a lot from one manual to another and undoubtedly reflects what is characteristic of an archaeological context where the author of the manual has gathered working experience (e.g. JOU1980), where the manual is supposed to be used (esp. regional manuals, e.g. BLA1980, LUC2003, ANF2005, HRB2008 and RCA2011), what is considered important to do and describe (e.g. surfaces in CCA2001,

documentation of work process in JAC2005) but also what is too evident to mention in a manual. Similarly to typical archaeological documentation [13], the manuals do also focus on producing textual and graphic representations of visual observations (with certain exceptions, for example, LUC2003 and SAN2017) rather than, for example, of how something feels, smells or tastes.

Scrutinised using the theoretical concepts of working space and point of reference as a lens, it becomes apparent that authors define (or 'fix' [as for 19]) with the manuals a recognisable working space within a broader epistemic living space outlined by their underlying theoretical engagements. For example, in WES1994 and LUC2003, the working space is the single-context method. In administrative contract archaeology manuals (e.g. VDH2011, HC2012 and WOR2019) it is perhaps best described as 'outsourced archaeological data production' while in the earliest manuals (especially DRO1915, BAD1934; also HAM1963), there is an evident scent of old antiquarian dispositions to archaeological work. Some authors outline the working space as a personal space of the field director or recorder (e.g. RCA2011 and LUC2003), often using the authors' personal experience as a frame of reference (e.g. BAD1934 and JOU1980). Such framing reminds us of similar tendencies observed with other types of documents of activities in archaeology and beyond [20,126]. In contrast to framing the working space as personal, many of the administrative manuals rationalise this space from the perspective of 'archaeology' as a collective actor (e.g. HRB2008 and BIR2010), a tendency that shows affinities with the professionalisation and formalisation of archaeological during the past decades.

Similarly to how analysing manual texts unfolds evidence of how working spaces are framed, cross-references between them carry evidence of how the individual working spaces are related to others. References to earlier editions of the same text (e.g. LUC2003 and VDH2011) provide indications of how a working space changes in time. Cross-references to other manuals (e.g. LUC2003 of WES1994 in Island, WOR2019 cf. WES1994) can be interpreted in terms of cultural translations or adaptations [60] of particular epistemic living spaces as working spaces in new countries, regions or projects. The general scarcity of direct cross-references and multiplicity of implicit influences evidences also clearly show how the working spaces of archaeological field documentation unfold only to a limited extent explicitly through the manual literature. A comment in a review of JOU1980 that '[t]here will always be room in a field library for this book; the crew might not refer to it often, but it's nice to know it's there' [127] (p. 671) serves as a fitting illustration of this.

Moreover, while the manuals advocate for a specific preferable working space field archaeologists should occupy, they are not always used according to the same premises. Earlier evidence on how JOU1980 and WES1994 are cited suggests that the working space they describe and set up can also be mobilised as a contrasting example to how a particular investigation is run [11]. In this respect, rather than forming an actual working space for an on-going fieldwork project, some of the manuals and the working spaces they describe have turned into infrastructural points of reference, or as Lucas [58] (p. 139) has noted, loci classici for certain methods and procedures. The working spaces outlined in some of the more generic texts (e.g. DEV1978 and JOU1980) have become points of reference to archaeological fieldwork as a whole in an even broader sense through citations they get from the literature outside of the archaeology discipline [11]. In this respect, while archaeologists have been criticised for doing everything by the book [61], and at least equally problematic premise is assuming to do so while using the book only as a loose point of reference. Independent of whether a manual is framed as a model of (description) or for (prescription) proper fieldwork and documentation, it is likely to function as both an infrastructural point of reference of an ideal for achieving a reasonable quality of work and documentation.

While any deviations from the procedures described in a manual are clearly problematic if the text is supposed to function as a sanctioned precept, their intricacy is more of an open question if field manuals are treated as records of particular archaeological working spaces. If the assumption is that information processes are linear and continuous, all knowledge is supposed to be made explicit, and a manual text should be readable as a reliable description, a deviation is a problem. In contrast, if the value of intrinsic information [43] and discontinuities of information flows are taken seriously, and the flows are framed as a series of makings and takings [128], deviations are an integral part of how field manuals are supposed to be used and a premise of how the field manual genre can be expected to work. Against this latter backdrop, a more pertinent issue than to frame the lack of adherence as a problem and to try to increase conformity to the manuals, is to increase the understanding of the working spaces and epistemic living spaces where the manuals were made and the ones they make themselves. As a form of a 'history of culture making' [78], understanding the history of space-making in and with the manuals, and how they have been used, can help to understand how they were intended and have been enacted to instruct, prescribe and describe archaeological documentation work. Reading manuals together with archaeological documentation in the working space they together enact can provide access to such intrinsic information, which is difficult or impossible to codify and available only in the working space itself in the tracts between how the manuals instruct to document and how the documentation looks like.

As a whole, independent of how a manual writer has aimed at influencing archaeological fieldwork in general and documentation work in particular, it is evident that any field manual regulates fieldwork practices only partially and functions at the most as an indirect and partial record of what actually happened. Like in the study of Maron and Feinberg [129,130] with metadata standard creators and users, the given ends of manual writers do not (fully) align with the guiding ends of the manual readers. In this sense, the field manuals remind us of what Latour [131] (p. 288) writes about the shortcomings of law as an information carrier and how it is invisible and, in a figurative sense, hardly exists in how it describes a path rather than addresses complex ontological issues.

The findings also point to the difficulty of standardising and providing exact instructions for documenting doings. As with any routine work [104], enacting the instructions inscribed in a manual and turning them into a standard modus operandi requires a lot of work. It is conceivable that project and administration-specific manuals are probably followed more closely than generic texts. However, as a whole, rather than taking a manual at its face-value as an exact description of a working space, manuals are undoubtedly most useful when read in tandem with field documentation [38]. The manual text informs best when it is constantly compared with the results of the work they have instructed, prescribed or are purported to describe.

6.3. Field manuals and their implications to paradata

The final research question (RQ3) of this study focuses on what an analysis of archaeological field manuals can disclose of their implications to paradata, that is documentation of various aspects of (archaeological) work processes. The most obvious observation is that while many manuals give detailed instructions on how to document, for instance, archaeological features and finds, descriptions relating to documenting work processes remain vague. Some manuals provide, however, more specific advice. Arguing for the inclusion of a research plan developed prior to the investigation, naming methods and such paradata-relevant details as exact time and coordinates, names or initials of documenting archaeologists, research questions and premises of decision-making in the field signals of a strive for inclusion of formal and (at least somewhat) objective details of how the documentation proceeded. Looking at the differences between the analysed manuals, the significance of such details has clearly become increasingly important as the division of labour and the number of individuals participating in the documentation work have increased, the documentation has been formalised and standardised, and its focus has shifted from filling personal notebooks to formal data collection.

Considering the variety and scarcity of advice given in the analysed set of field manuals, it is not a great surprise that archaeological documentation has been noted to contain highly varied and relatively little explicit paradata [4]. The scarcity of explicit advice also means that apart from being heterogeneous and in short supply, the manuals direct paradata towards being predominantly subjective and situated. The findings from earlier studies of paradata suggest that even if the manuals are obviously not the only regulatory instrument in archaeological documentation work, this characterises much of paradata in field documentation [4,46]. In a critique of the archaeological excavation record, Bucellati [40] argues that '[w]hat is documented is the excavator's understanding of processes, not the processes themselves' (p. 80). Subjectivity and situatedness are promoted explicitly in several manuals (e.g. BLA1980, CCA2001 and OSP2007) and tolerated in others (e.g. RCA2011 and SAN2017) in how they emphasise, or at least acknowledge, the occasional importance of personal notes and comments as a part of an account of the work process.

A parallel implication of scarce formal advice and mandatory details is the likelihood that only personally relevant details are documented explicitly, and much of the paradata is conveyed as implicit traces and knowledge ingredients [132] in the documentation. In addition to being in explicit accounts and descriptions, named methods and plans, paradata becomes also documented as a part of naming and documenting archaeological things. Therefore, as Baker [38] observed, knowledge of documenting is derived also from the use of the documentation. It emerges from the documentation itself rather than explicit paradata. This can be a problem if documenters assume that they are documenting by the book [61] and producing an objective, explicit account decipherable by anyone. In contrast, interpreting such documentation requires knowledge of documentation genre(s) and experience and intrinsic knowledge of archaeological work both in general and at a particular site. Huvila [114] has earlier referred to this in terms of keeping a short epistemic distance from the community of origin of the documentation. This also applies to traces found in the documentation of archaeological features. In practice, this means paradata is not a stable entity but becomes a function of the inscribed implicit and explicit evidence and the intrinsic knowledge of whoever studies it. It does not, however, mean that (much) less paradata would have to be captured and documented but rather evinces of the dominance of different regimes [133] or paradigms [58] of explicitness of paradata.

7. Conclusion

The findings of this study show how field manuals assume different approaches to regulating archaeological documentation work. They can be instructive, prescriptive or descriptive. The explicit advice given on documenting documentation work include developing a research plan and using it as a point of reference during an investigation, writing accounts of the work in text and using photographs, providing references to used methods and documenting various elements, premises and conditions of the documentation work. The documentation is framed largely as a complement to the documentation of archaeological features that should help to assess their reliability and future use rather than a complete description in its own right. The manuals themselves are primarily aimed at insiders, either professionals or archaeologists in education. They form a distinctive literary genre with recurrent references to earlier exemplars of the same family of texts.

However, when compared with how the manuals are cited in the literature, it appears that they are not necessarily used as intended by their authors. Independent of the intentions of their authors to form a particular kind of preferred working space of how the fieldwork and its documentation should proceed, the manuals and their respective working spaces are probably mostly used as points of reference rather than followed to the point as recipes [95]. In some cases, manuals are undoubtedly followed meticulously and can form a comprehensive account and corpus of paradata of a specific documentation process. However, to get an idea of what a particular fieldwork process looked like, it is more reasonable to approach them as compendiums and use them in tandem with other available documentation material. When a manual is used as a description or a norm (prescription) to guide fieldwork, it would undoubtedly be useful if the extent to which the described procedures were followed would be written down in the field documentation and when the documentation work deviated from the description included in the manual.

When considering the impact of field manuals to produced paradata, the relative scarcity and unspecificity of advice is destined to lead to earlier observed subjectivity and heterogeneity of documentation. This is not necessarily a problem per se for the (re)usability of the documentation or paradata but means that much of the paradata remains intrinsic and implicit and is useful only for experienced insiders with a short epistemic distance from those who produced the documentation. Using paradata, in datafied terms as data, and making it quantifiable and technically interoperable with other corpuses of (para)data becomes, if not necessarily impossible, an exercise that requires a lot of consideration and a good understanding of the data and its inherent limitations.

Besides providing new knowledge on how field manuals regulate archaeological field documentation and how they inform archaeological work processes, the findings of this study have several conceivable broader implications for information research. These findings form a useful basis for future studies of instruction manuals as an information genre and their implications for information practices in other contexts, from other areas of research and professional work to daily domestic endeavours. For such studies, the observations of what field manuals can tell us about typical and particular (archaeological) information practices and the mechanisms of how archaeological field manuals instruct their users provide a fruitful point of comparison. Finally, on a practical note, the findings of this study on how instruction manuals work can also help authors in writing better manuals, understanding why manuals do (not) work as intended, and how to better instruct information workers in professional, non-professional and leisurely contexts alike to attain their goals.

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Supplemental material

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