Thematic Section:
Changing Orders of Knowledge?
Encyclopedias in Transition

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Tales from the field

Introduction
Changing Orders of Knowledge?
Encyclopaedias in Transition

By Jutta Haider & Olof Sundin

In the West encyclopaedias have long functioned as the standard for defining what can be considered public, established knowledge in a given time and culture. The modern encyclopaedia, with its roots in the enlightenment, has come to symbolise science and reason (Yeo 2001). The encyclopaedia stands for trustworthiness and stability, at the same time as it has actually always changed hand in hand with cultural and technical developments. Most recently, connected to digitisation, encyclopaedias' production, consumption, use, distribution and significance, are changing profoundly, so profound in fact that our society's view of what encyclopaedic knowledge is, who should produce and vet for its reliability and how it should be used seems to be changing in every way. Having said that, our understanding of *Wikipedia* benefits from seeing the historical context of encyclopaedism, which is clearly a continued influence even today (Reagle & Loveland 2013). And at the same time as some mourn the demise of encyclopaedias communicated in print, encyclopaedic knowledge is ubiquitous as never before. It is produced collectively by many people and is a vital part of the web. While understandably a lot has been said about *Wikipedia* and from almost every angle (e.g. Jullien 2012), other contemporary, most often online encyclopaedias, especially professional ones, have not received that much attention in research. Yet they are two sides of the same coin.

All this of course has to do with the enormous success of *Wikipedia*, which, according to *Alexa.com*, today holds a stable position amongst the six most popular websites in the world. Almost invariably it is a link to *Wikipedia*, which comes first in a search engine results page. It has even received one of popular culture's most coveted stamps of approval and features in not one, but several episodes of 'The Simpsons' and obviously there is a *Wikipedia* entry recording this (Wikipedia 2014a). *Wikipedia* is a part of popular culture and fundamental to the information economy of today in a way – it seems safe to say – that no other encyclopaedia ever was fundamental to all parts of the society of its time. This new type of encyclopaedic knowledge is everywhere. Yet the 'old', the professional encyclopaedias are still there and they are far from obsolescent or unchanging. They are transforming themselves in the face of digitisation. Some give up, yet others continue either as general-purpose reference works or in niches and specialisations and even new ones are founded. They are present in schools, libraries and

universities and news media often draw on them in their research. They are diversifying in many exciting and dynamic ways. Some have turned from products into highly specialised information services, while others focus on cultural heritage issues and even new encyclopaedias are being established. It is this change, this dynamic new order of encyclopaedic knowledge at the intersection of *Wikipedia* with other encyclopaedias and other knowledge systems that is the reason for this special issue.

From Shelves to Boxes and Networks of Competition

The traditional encyclopaedias of the past have been moved from the living room shelves to boxes in storage rooms or, if they were lucky, to summer cottages. In its early days the Internet made possible new ways for distributing encyclopaedic information while publishers continued with their economic model based on the premise that an encyclopaedia is an artefact, a product to be sold (cf. Clark 2001). CD-ROM encyclopaedias, such as the English-language encyclopaedias *Compton*, *Grolier* and *Encarta*, demonstrated successfully the possibilities created by multimedia content and ease of digital distribution. Yet that was before *Wikipedia*, before 'free' culture and, above all, before *Google*. Since the huge success of *Wikipedia*, to a degree in tandem with the *Googlification* of the Internet, the once popular and authoritative professional encyclopaedias of the past have experienced difficulties, some more so than others. To mention a few telling examples: the famous German *Brockhaus* announced its termination in 2013; the year before, in 2012, *Encyclopaedia Britannica* announced that it will discontinue its print edition, the Swedish-language *Nationalencyklopedin* has severely cut the number of staff in its editorial room and explores new ways to move forward, while the Norwegian-language *Store Norske Leksikon* experiments with new forms for encyclopaedic production at the same time as it lobbies for state funding. At the same time, *Google* has taken things even further with its *Knowledge Graph*. Here *Google* aggregates open data from other sites, such as *Wikipedia*, in order to present encyclopaedia-type information on certain names, places and phenomena. Thereby, *Google* does not just feed *Wikipedia* with user traffic; it uses *Wikipedia's* data – and eventually other sources – to itself present compact encyclopaedia-type information on certain subjects. The future will show what this might mean for the development of *Wikipedia* and online encyclopaedic information.

Once unquestioned pillars of formal public knowledge in society, encyclopaedias now not only face competition, they also have to relate to different sets of production modes favouring a new order of knowledge. This new order is shaped by search engines, social media and other fast moving, fast expanding enterprises of an ad-based, data-driven attention economy comfortably couched in contemporary consumer culture. Professional encyclopaedias have not only difficulties to

find a business model adjusted for the new economy on the web. They have also seen their epistemological foundation being challenged. For instance, in an – admittedly much criticised, but widely publicised – article in *Nature* from 2005 it was argued, based on a comparative study, that the qualitative differences between *Encyclopaedia Britannica* and *Wikipedia* were unsubstantial (Giles 2005). This was an earthquake in the domain of encyclopaedic knowledge production and it was felt far from the publishers' editorial offices. The study went viral and it gave *Wikipedia* a stamp of approval making it into an epistemologically valid alternative to the professionally produced traditional encyclopaedias. *Wikipedia* was not only easier to access and free for users; it could now also compete with its content in the same league as traditional encyclopaedias. It was finally established as being worthy of trust – at least sufficiently so for most purposes.

If we turn to reference works and encyclopaedias for a definition of encyclopaedias this is what we get. The freely accessible online dictionary *Merriam-Webster* (n.d.), a sister to the famous *Encyclopaedia Britannica*, defines encyclopaedias as '[r]eference work that contains information on all branches of knowledge or that treats a particular branch of knowledge comprehensively'. Fairly identical, the English-language *Wikipedia* describes an encyclopaedia as 'a type of reference work – a compendium holding a summary of information from either all branches of knowledge or a particular branch of knowledge' (Wikipedia 2014b), while NE, the Swedish *Nationalencyklopedin*, talks of 'a reference work, either in print or in digital form, with the ambition to summarise all there is to be known, either in general or in a certain area' [translation from Swedish by the authors] (NE, n.d.).

Are such reference works valid today? What is their role in today's information and media landscape characterised by instantaneous access and an abundance of information? How are they produced, communicated and used? How can we understand contemporary encyclopaedism through history? What is their role in scientific communication? How are they and their value imagined by its users? These are just some of the questions that the authors in this theme section address in their individual articles.

The Articles

For this theme section we invited submission reflecting on the encounter, productive or otherwise, between encyclopaedic knowledge formed by a plethora of traditions and the constantly changing material conditions for production, communication, use and circulation of knowledge. The response was extremely positive and we received a high number of exciting articles that represented both historical and contemporary studies. The historical perspectives relate their results to contemporary circumstances and the research on *Wikipedia* locates the participatory encyclopaedia either in a tradition of encyclopaedism or in larger cultural dis-

courses. The peer-reviewed articles can roughly be divided into three overarching groups, although these overlap: Firstly, a number of articles engage with how understandings of what an encyclopaedia is and what it should do are culturally specific. Secondly, a group of articles situates today's changes in how encyclopaedias are produced, consumed and perceived in various historical contexts, including previous media specific changes. Thirdly, the last group relates to *Wikipedia* as today's dominant encyclopaedia paradigm. One common theme throughout is how encyclopaedias depend on the trust invested in them and how this 'currency' is also played out in the digital world, and has probably become even more important (Sundin & Haider 2013). This goes hand in hand with another common thesis, namely the continued presence of Enlightenment ideals that also permeate digital encyclopaedias (Haider & Sundin 2009). In addition, we have also received a number of papers written from the perspective of practitioners and with 'insider' knowledge. Therefore we decided to give space to shorter non peer-reviewed field reports that provide the theme section with an up-to-date understanding of encyclopaedism and encyclopaedias today by those who produce them.

Understandings

Katharine Schopflin contributes with an investigation into how publishers, librarians and users of encyclopaedias characterise encyclopaedias as well as into how these characterisations are expressed in *Britannica Online*, *The Stanford Encyclopaedia of Philosophy* and *Wikipedia*. Based on an extensive interview study, she shows in which ways ideas of what an encyclopaedia is, are to a high degree developed in relation to a print paradigm. This is despite the fact that today's encyclopaedias, which people also regularly use, are predominantly digital and online. In her article, Vanessa Aliniaina Rasoamampianina studies how and to what extent authority is attributed to contemporary encyclopaedias and she does that by means of a meticulous analysis of book reviews of encyclopaedias. She draws specifically on the theoretical concept of cognitive authority to show in which ways encyclopaedias' authority is always ambivalent, never stable and under constant negotiation.

Histories

Seth Rudy puts the spotlight on utility, specifically on how ideas of encyclopaedic utility change depending on the historical context. Rudy's contribution provides a historical account of *Encyclopaedia Britannica*, which is then related to contemporary online *Britannica*. He analyses a certain type of paratext, namely recommendations of how the encyclopaedia should be used, that is how it should be read, according to its publishers. Thereby Rudy demonstrates the subtle ways in which enlightenment ideals continue to imbue todays' *Encyclopaedia Britannica,*

despite media changes. Siv Frøydis Berg and Tore Rem scrutinize the relation between encyclopaedias seen as commercial commodities by investigating 20th-century Norwegian encyclopaedias. The authors show how 'speed' and 'modernization' were the most important constituents in the self-descriptions of the encyclopaedias. Berg and Rem conclude their article by presenting a contemporary Norwegian discussion about the funding of a professional encyclopaedia in relation to *Wikipedia*. With this discussion the authors argue that notions of 'trust' and 'trustworthiness' are at the core of digital encyclopaedias. Ulrike Spree's contribution contains numerous relevant threads that tie today's *Wikipedia* back to historical understandings of encyclopaedias. For instance, she shows how, despite fundamental changes, today's user/producer engagement in *Wikipedia* has clear connections to how users engaged with print encyclopaedias in the 19th century and how their involvement was met by editors. She bases this on a comparison of published answers to letters that were addressed to the editor of a traditional German encyclopaedia in the 19th century with discussion pages on *Wikipedia*. Ulrike Spree also discusses how notions of neutrality that underlie encyclopaedic writing in 19th century Germany can be situated in the liberal political camp, which was considered a middle-ground capable of mediating between extreme position of the party political spectrum.

Wikipedia

Kim Osman provides an insightful analysis of how notions of *Wikipedia* as a free and non-commercial resource collide with today's dominant discourse revolving around commercialism. This is also given a diachronic dimension by relating it to a change in values over time. Specifically, Osman studies the handling of three failed proposals to ban paid advocacy in *Wikipedia*. Finally, Simon Lindgren traces how *Wikipedia* content is employed in scholarly research. He innovatively combines discourse analysis with bibliometrics and shows an overall increase of the use of *Wikipedia* in the scholarly literature in the last decade, at the same time as reference to *Wikipedia* in this type of literature is not fully established as accepted practice, and often accompanied by apologetic statements, thus questioning the trust invested into *Wikipedia*.

Tales From the Field

The four 'tales from the field'-articles provide valuable insights into the circumstances for encyclopaedic production today. Georg Kjøll and Anne Marit Godal describe how the Norwegian online encyclopaedia *Store Norske Leksikon* combines transparency as advocated by *Wikipedia* with a network of contributing paid and named contributors. Lennart Guldbrantsson discusses the challenge for the Swedish *Wikipedia*, as a crowd sourced project, to attract more women contributors. In an article on the Minnesota based, cultural heritage encyclopaedia *MNo-*

pedia Molly Huber, just as Georg Kjøll and Anne Marit Godal, presents an example of a contemporary online encyclopaedia with a local focus that combines controlled editing with user input. Lastly, Michael Upshall attempts to take us beyond *Wikipedia* by introducing a model for encyclopaedic knowledge production based on linked-data and possibilities of the semantic web. Together, and in the light of the research articles, these tales from the field go to show that although *Wikipedia* is today's undisputed point of reference when it comes to encyclopaedias – maybe even more so and on more levels than its grand predecessors ever were – there are many other ways of producing encyclopaedias online, of relating to relevance of knowledge and information and of creating trust.

All in all, this special issue represents authors based in seven countries and four continents, Europe, North America, Australia, and Africa. It also unites a number of different disciplines that are not usually seen together in the same publishing venue and that represent different traditions of doing research, asking questions and of writing. This diversity is a particular strength of this special issue. The reviewers came from equally many countries and also their disciplinary backgrounds are varying. They have contributed with their time, knowledge and expertise. Their inputs have been invaluable and we want to thank them for their efforts.

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What do we Think an Encyclopaedia is?

By Katharine Schopflin

Abstract

The death of the encyclopaedia is increasingly reported in connection with the abandonment of hard copy reference publishing, the dispersal of library reference collections and the preference for end-users to seek information from search engines and social media. Yet this particular form of the book evolved in a very specific way to meet the needs of knowledge-seekers, needs which persist and perhaps flourish in an age of information curiosity. This article uncovers what is meant by 'encyclopaedia' by those who produce and use them. Based on survey and interview research carried out with publishers, librarians and higher education students, it demonstrates that certain physical features and qualities are associated with the encyclopaedia and continue to be valued by them. Having identified these qualities, the article then explores whether they apply to three incidences of electronic encyclopaedias, *Britannica Online*, *The Stanford Encyclopedia of Philosophy* and *Wikipedia*. Could it be that rather than falling into obsolescence, their valued qualities are being adopted by online forms of knowledge provision?

Keywords: Encyclopaedias, publishing, reference books, information-seeking behavior, book history

Why the Encyclopaedia?

When asked to picture an encyclopaedia, many will call up an image of a heavy, hardback book, to be consulted using its alphabetical headings, indexes and cross-references to locate trusted pieces of knowledge. It is associated irrevocably with a mode of information-seeking which has been replaced by the use of the public web, or at the very least, powerfully-indexed online databases. According to Sundin & Haider (2013) 'We are now in the middle of a transition period and the way in which encyclopaedic knowledge, as a form of public knowledge, is communicated is changing profoundly'. The second decade of the 21st century might, therefore, be an interesting time to address the question of how those most intimately associated with encyclopaedias express that it functions. This article[1] uses approaches drawn from the discipline of book history, to explore what the participants in the lifecycle of the contemporary encyclopaedia think an encyclopaedia should look like and the abstract qualities displayed by a good example. Publishers use the word *encyclopaedia* in their titles, librarians purchase them and consumers consult them with certain expectations of what they will find. The research on which this article is based consulted all three groups to see how they expressed what they thought an encyclopaedia was.

As outlined below, those interviewed were allowed to use their own words to describe the encyclopaedia and the approach of the research was exploratory and qualitative. Nevertheless, for the sake of clarity, an *a priori* definition will be useful to establish what kind of books this article is concerned with. For the purposes of this article, the encyclopaedia is a published reference book offering access to discursive factual information divided into entries and arranged systematically or alphabetically. It aims for a comprehensive coverage of a topic, or range of topics. Encyclopaedia contents are divided up into entries, but there is depth in the contents. They are more likely to be written in sentences than other forms of reference book and to be *about* the headword at the top of the entry. They might be considered the least *referencey* of reference books, containing the largest chunks of text and least reliance on page layout. This is contestable, indeed, is contradicted in places by the opinions of the participants in the research, but establishes a starting point for investigation.

Within the discipline of Book History, encyclopaedias have held a marginal place. A field that has at its centre questions about 'the reception, the composition, the material existence, and the cultural production of what is called the book' (Howsam 2006: 46) has tended to neglect those books designed for consultation rather than end-to-end reading. Far more interesting are celebrated works of fact or fiction, or, conversely, popular works with a domestic identity, objects of contemplation whose marks of ownership gives us clues to the cultural lives of their readers (Blair 2010: 230). Encyclopaedias have been the subject of study either as

the means of exploring a specific historical cultural milieu, for example the French enlightenment (Darnton 1979) or early modern Europe (Yeo 2001), or as one of a series of methods of information storage whose identity as books is of small concern (Stockwell 2000; Wright 2007).

Yet encyclopaedias are an intriguing part of the life story of the book simply because of that which makes them distinct from other forms of published books. First, far more than fiction or monographs, they are identified by their format and physical appearance as much as by their content. They are immediately recognisable because of how they look: Instead of continuous pages of text, readers can expect to find individual articles or entries arranged under title headings. Prominent use of typographical features such as paragraphs and white space, bold and italic fonts and running heads mean that that they appear physically distinct from monographs. Secondly, encyclopaedia readers engage with them in a different way from books designed to be read from beginning to end. Unlike them, they are identified by their use rather than intention and a particular type of reader-behaviour, consultation, is associated with them (Attwooll 1986; Stevens 1987). Although scholars do use monographs and their indexes to refer to individual pieces of knowledge, encyclopaedias are specifically designed to meet this usage by facilitating access to their knowledge in the way they are arranged. Their function – by intention if not reception – is largely one of information rather than entertainment. This does not make them unique, but it means they lack a characteristic associated with such prominent forms of the book as the novel.

Encyclopaedias are also different from other reference books, such as dictionaries, gazetteers or recipe books. Encyclopaedias reveal far more about the society that produces them than forms such as the lexical dictionary, because their entries tend to be longer than those of dictionaries, use sentences, be discursive and to discuss rather than simply define their headword. Encyclopaedia entries are often articles covering many pages, aiming to encompass the breadth of an entire topic. This can make them controversial: Over the centuries, arguments about what an encyclopaedia should contain, who should compile it and how it should be arranged have reflected attitudes towards authorship and authority, the accessibility of knowledge and the possibility of capturing and recording all that is believed to be true and accurate. In some cases their influence has been huge: 'Grand projects like the *Encyclopaedia Britannica*, The *Encyclopédie* and *The Oxford English Dictionary* have all had tremendous social and cultural effects, acting as guardians of accuracy, setters of standards, summarizers of important and intellectual material' (Finkelstein & McCleery 2005: 4) (while this quotation includes a lexical dictionary, the OED is exceptional in terms of the amount of historical, one might almost suggest encyclopaedic, information it includes). It might be suggested that ubiquity of *Google* and *Wikipedia* mean they offer the same kind of influence as information resources today. In other contexts encyclopaedias are familiar domestic objects residing on the bookshelves of a family home. The authority conveyed

by handsomely-bound volumes sitting on a domestic bookshelf, intended to offer access to factual information over the course of a lifetime, is also part of the encyclopaedia's story.

In either case, encyclopaedias have had an important role to play in the way people, and in particular, those who are not experts in any field, have chosen to acquire knowledge over the past three centuries. As Haider and Sundin (2010) suggest the 'encyclopaedic project' to share accepted public knowledge with a wider audience than the educational elite that gained currency in the early 20th century, persists in the way that contemporary information-seekers seek to satisfy their curiosity, today using online sources including the open web. As the role of Book History is to explore the relationship between the book and its creators and readers, this article aims to investigate how those who participate in the encyclopaedia's production, communication and reception relate to it.

The research used in this article was largely based on user-responses to the hard copy encyclopaedia. This was because the intention of the research was to find a definition for a form of the book, which began its life in hard copy. The cultural notion of the encyclopaedia, when the term became first associated with the book form, was as an object, something printed, editorially mediated and held between covers. Nevertheless, the publishers, librarians and end-users interviewed are likely to have used electronic encyclopaedias, indeed may at this time exclusively use encyclopaedias online rather than in print. This does not negate the purpose of the research, which was to form a definition of what abstract and physical characteristics the encyclopaedia holds, according to its creators and users. But it is worth noting that the research may carry a disconnect between the encyclopaedias published, purchased and referred to on the one hand, and the popular idea of what one should be. This is reflective of a moment in Book History where certain types of book, of which the encyclopaedia is one, exist fully-formed as physical entities but are emerging in digital form as well. In many cases, they have ceased to exist in printed format.

The following sections outline the theoretical basis for the enquiry in the field of book history and the methodology used to carry out the research.

The Encyclopaedia and Book History

The focus of the field of Book History is the material form of the book. Donald F. McKenzie, a pioneer in Anglo-American book studies, redefined the field (then called bibliography) as studying 'texts as recorded forms, and the processes of their transmission, including their production and reception' (McKenzie 1985: 4). The work of the great book historians has helped to elucidate how the circumstances under which books have been produced, the intellectual context of their writing and their audience have influenced the form they have taken. An investigation into the material form and functional attributes of the encyclopaedia would

seem to be ideally placed within book history. Yet its focus has thus far mostly been individual titles, series or the works of specific authors. Unlike other forms of cultural analysis (such as Art History and Literary Criticism), the methodological tools of the discipline have rarely been used to establish the identity of a book genre or format. It is rare for a book historian to ask 'what type of book is an encyclopaedia? What form does it take?'. The research behind this article aims to redress this balance.

Book History, a relatively new academic discipline drawn from history, bibliography, library and information studies, sociology and cultural and communications studies, is associated with no single methodology. Indeed, according to Finklestein and McLeery 'Competing methodologies are a feature of modern book history' (2005: 12). Quantitative and qualitative analyses of sources such as print runs, employment records, bibliographies, libraries and booksellers' inventories was a common approach of the *Histoire du Livre* scholars of the 1980s and their followers (Darnton 1990: 162), revealing much about the selling, buying and reading habits of particular communities. As this approach came from the field of history, it has been most commonly used to investigate the publishing or reading habits of a specific place and time, rather than a type of book.

Analysing the text, or the object, has been another approach. McKenzie drew his research approaches from traditional analytical bibliography, studying books for the signs of textual intervention that were part of the book's transformation from an authorial text to the object that the reader encountered. His revolutionary approach was to assert that authorial intention 'must always be understood 'against a background of human conventions, expectations, practices and procedures' (1985: 91). The text cannot be seen as emerging untainted from the author's individual genius. Rather, the author and printer combine to produce a text, which will fulfil the expectations of the consumer. Similarly, Gérard Genette's identification of paratexts, such mediating devices as title pages and book jackets, as 'zones of transaction' between the author (or publisher) and the reader (Genette 1997: 2) has been an influential way of considering the book as a physical object. Such features are the means by which a book is packaged to convey its content in a particular way to a reader. However, Genette chooses to use his method on celebrated works of French literature and the approach has not been applied to identify the zones of transaction across a category of book.

Sociological and ethnographic research is also part of Book History, particularly answering questions about reading habits. Reader-response criticism was adopted from cultural theory by scholars such as Janice Radway, who interviewed the readers of romance novels as a means of considering this form of publication (Radway 1984). A range of qualitative and quantitative approaches using surveys and interviews have answered questions about the role that certain books play in the lives of their readers. Here, as was the case with Radway's research, the focus has sometimes been specific genres, but this is usually within fiction.

The research for this article aimed to gather opinion on the nature of the encyclopaedia from those involved in producing, communicating and consuming it, providing an illustration of what an encyclopaedia is considered to be by those who are most familiar with it. To some extent, it followed Radway in identifying a group of users of a particular type of genre fiction and recording their reactions. As with her research, the present author aimed to examine how sets of conventions associated with a particular type of book were perceived by its users. However, the key elements of narrative, plot and characters are not part of the encyclopaedia, meaning that a genre studies approach would not have been appropriate. Nor do users of reference works have the same kind of emotional relationship with them as those of forms of fiction. As Blair (2010: 230) points out, encyclopaedias are often owned by institutions rather than by individuals, providing few clues to their place in their readers' lives (although there is of course, a long history of encyclopaedias sold to families, often paid for by instalments – see Einbinder (1964) for a critical account of this). In many cases, encyclopaedias are purchased by librarians, who use them for research themselves, as well as recommending their use to readers. It seemed unlikely that many users, could a suitable sample be found, would be able to produce a detailed articulate response on the encyclopaedia, as Radway's reader-group had been able to. An ethnographic approach examining encyclopaedia users' response to the form was therefore rejected in favour of using surveys and brief interviews with a small number of questions, albeit ones encouraging free expression and without pre-determined choices. Moreover, it was felt that in the world of the encyclopaedia, the end-user's opinion alone was insufficient. This study therefore sought representatives from all parts of the encyclopaedia's life-cycle.

In order to identify the key participants in the life of the encyclopaedia, Robert Darnton's 'Communication circuit of the book' outlined in his article 'What is the history of books' (Darnton 1982), was used as a framework. His circuit identifies the people or industry functions, which contribute to the book production and consumption process including authors, publishers, printers and readers. He depicts external factors ('intellectual influences' 'economic and social conjuncture' and 'political and legal sanctions') affecting all part of the cycle. Although some areas are kept broad ('Readers' includes 'purchasers', 'borrowers', 'clubs' and 'libraries') the diagram is necessarily based on Darnton's own time and place of interest, that is, the French enlightenment. Darnton's circuit produced a critical response from Thomas Adams and Nicolas Barker (1993) who countered with their 'bio-bibliographic model'. Where Darnton highlighted the roles of a book's producers and consumers, Adams and Barker pinpointed stages of the life of the book itself: publication, manufacture, distribution, reception and survival. As such, their circuit is more universal, but in some ways less descriptive. The model the author produced for the contemporary encyclopaedia (Figure 1) brings in elements from both approaches, highlighting both actors and processes. This was

used as a basis for identifying the key participants in the encyclopaedia's lifecycle, and therefore, the sample for interviews and surveys.
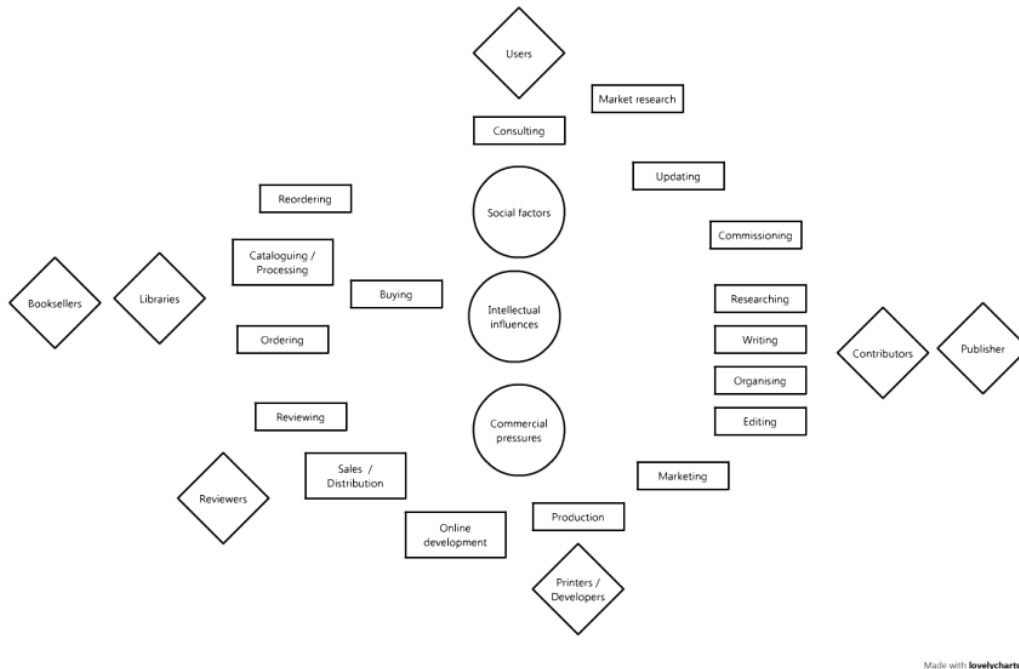

Figure 1: The Encyclopaedia Communications Circuit

Data Collection

The data for this article was collected from the three main participant groups in the encyclopaedia's communications circuit: publishers, librarians and readers (perhaps more accurately called users, given the manner in which encyclopaedia contents are commonly accessed). A mixture of interviewing and surveys was carried out for a number of reasons, some of them practical. While it was possible to interview the publishers group, a survey was the only method to reach the much-larger number in the reader group in the time available. In all three cases, subjects were asked generally about their experience in connection with reference books, then specifically encyclopaedias, in order to focus their minds on the subject of the survey. They were then asked to describe in their own words what they considered, in turn, the physical features and functional values (or attributes), they would expect from an encyclopaedia.

Although initial questions differed between the three groups, because of the differing background knowledge on encyclopaedias they held, all three were

asked the same three open questions, whether interviewed in person, by email or by online survey, as follows:

- What physical characteristics make up an encyclopaedia to you?

- Can you think of any physical features which *must* be present for it to be an encyclopaedia?

- Can you tell me what abstract qualities characterise a successful example of an encyclopaedia?

Opening questions for the publishers and librarians were about their experiences with encyclopaedias, how they currently or previously had worked with them in their professional lives. Publisher interviews were carried out in person, by telephone or by email and all subjects were asked to read and amend the record of the interview to ensure it was representative of their opinions. Where a questionnaire was emailed, follow-up questions were used and the participants were able to check their answers, as with the interviews that took place in person. The aim was to gather an accurate impression of their beliefs about encyclopaedias, even if they changed their mind between the original interview and subsequent reading, and even if this actually gathered what they felt they ought to have said, rather than their first impressions. Like the publishers, the librarians who responded all had a high degree of awareness of the role of the encyclopaedia and were thus able to describe clearly their expectations. The questions put to them regarding their opinions of encyclopaedias (but not their experience) were identical to those put to publishers. Most completed questionnaires by email, but two were interviewed in person. Again, they were all allowed to correct the record of the interview.

The encyclopaedia readers were surveyed online. Initial questions were introduced, not to gather data, but to prepare the subject for the questions that followed. For example, they were initially asked about the types of reference books that they used or owned. This data was not used, but was aimed to help them identify in their minds what they understood a reference work to be. They were also asked what they considered to be the distinction between a dictionary and an encyclopaedia. This gained interesting results, which were not analysed, but aimed to help the subjects consider what makes reference books distinct from each other.

Every statement of opinion from each interview record or survey result was extracted and tabulated. Statements that seemed to have similar meanings were grouped together and labelled. Figure 2, below illustrates one example of how the free-text statements from across the three sets of participants were grouped under a single heading inductively selected by the author. This type of content analysis is inherently problematic. It is impossible to ascertain whether one individual's answer describes the same thing as another's and both are filtered through the analysts' subjectivity. Even where subjects used identical vocabulary, there was no guarantee that two people meant the same thing when they use the same word.

Moreover, while the users were all based in English-speaking countries, English may not have been the first language of some of them. In fact, quasi-synonymous concepts were grouped together because the underlying encyclopaedic characteristic was interpreted as being essentially the same. The results are a compromise between the ethnographic approach, where every result is considered uniquely valuable, and the universalist, which aims to create a consensus across the answers. Each participant's answer has an ethnographic value, both for the individual and the group they represented, but commonalities were sought between the answers to provide an overall picture of the encyclopaedia according to its communications circuit participants.

Research Sample

Finding a representative sample of interviewees who can be relied upon to provide honest answers to questions asked is a key challenge and was the motivation for identifying the encyclopaedia communications circuit as a guide. The stages of the communications circuit merge and blend into one another and participants take up multiple roles, or switch between them. However, for the sake of clarity, three types of participants were identified: publishers (which includes writers and researchers who participate in the creation of the book), librarians and users, all of whom needed to have an intimate relationship with encyclopaedias as part of their roles. Publishers, which included commissioning, consultant and contributing editors, were found through word of mouth and by making direct approaches. This group represents a small community and this was the best method to track down those with direct experience of encyclopaedias. Librarians were approached using email discussion lists and the online social network *Twitter*. This gave potential access to a large number of potential professionals although a comparatively small number agreed to complete the survey. No printers, developers or booksellers who identified themselves in relation to the encyclopaedia could be found.

The selection limited the possible number in each groups likely to be able to provide responses. The numbers found for each group varied: 12 responses (out of 20 approached) in the publisher category', 13 (out of 24 who began the survey) librarians and 85 users. The comparatively small number of publishing industry professionals, drawn from both UK and US publishing companies, was nevertheless a large proportion of those working within the reference publishing industries of those countries as a whole. The much larger number of end-users interviewed indicated the larger community from which they came. The librarians, all working in the UK, were a small but vocal sample of the community who engage with encyclopaedias as part of their work. More would have been preferable, but were unobtainable in the time available. This was mitigated by the fact that, in the cases of both the librarians and publishers, a good spread across different functions (editing, marketing, acquisition, research) was achieved. The publishers were in

many cases freelance, but those who were employed had been so in six different publishing companies. The librarians were all employed in different institutions.

Encyclopaedia readers presented a challenge for the sample: to find respondents who considered themselves encyclopaedia users and were capable of articulating their thoughts about them. While the survey would ideally have had responses from users from a range of backgrounds, including non-academic users, it was anticipated that the higher education community would contain a higher number of encyclopaedia users who identified themselves as such. In addition, it would have been extremely difficult to ensure that any selection of 'ordinary members of the public' was random within the scale of the study. Instead, the reader sample was taken from a distinct group, postgraduate Students from two UK multi-disciplinary universities, contacted via their postgraduate school / deanery. It is recognised that they could only be representative of their own grouping, not of the user category as a whole, but postgraduate students are more likely than undergraduates or those not in higher education to have used reference works and formed an understanding of what an encyclopaedia is. To an extent, all three sets of answers represented the opinion of an 'elite', in this case, those most identified with the encyclopaedia as creators, communicators and users.

Results

Respondents were asked both what they thought the most important abstract quality or value in an encyclopaedia was (here called 'function', to distinguish it from a physical characteristic) and what physical features they would expect to find in them. The three groups spontaneously named many of the same things, although the language varied within and across the groups. The chart below (Figure 2) illustrates this by showing the spontaneous answers individuals gave, subsequently categorised under the heading 'Authority'. Clearly this categorisation is challengeable, but indicates that even described differently, the different groups shared some of the same concerns:

Publishers	End-users	Librarians
Authority	Authoritative	It should be trustworthy written by experts in their fields.
Authority	Reliable	Who is the publisher / editor? What is their track record?
Authority	Trustworthy source	Authorititative
Authoritativeness	Trustworthy	Reliable
Authoritative	Truthfulness	Authority – it's important to look at the editorial board and their affiliations (and also to check their work elsewhere).
Intellectual respectibility of its provenance, as indicated by the eminence or qualifications of its writers	Truthfulness	Authority – without this there is no point to having it.
Authoritative	Reliable	Reliable
Authoritative	Written by an authority	Authority
Authority – made evident both by the contributor list and the publisher's own track record and reputation.	Trustworthiness	
Authority, indicated by the brand rather than the author.	Reliability	
Provide the user with confidence in its contents	Authority	

Figure 2: Example of answers given grouped together under the category 'Authority'

This figure illustrates the process taken to categorise the statements made by the respondents and interviewees. Some of the distinctions between the way the function is described can be ascribed to the different ways they encountered the question: a face-to-face or telephone interview is likelier to engender a wordier response than an online survey which the anonymous participant may like to complete as quickly as possible. Under those circumstances, it is interesting to note how far the three groups were in agreement both in their choice of function and the way they chose to describe it.
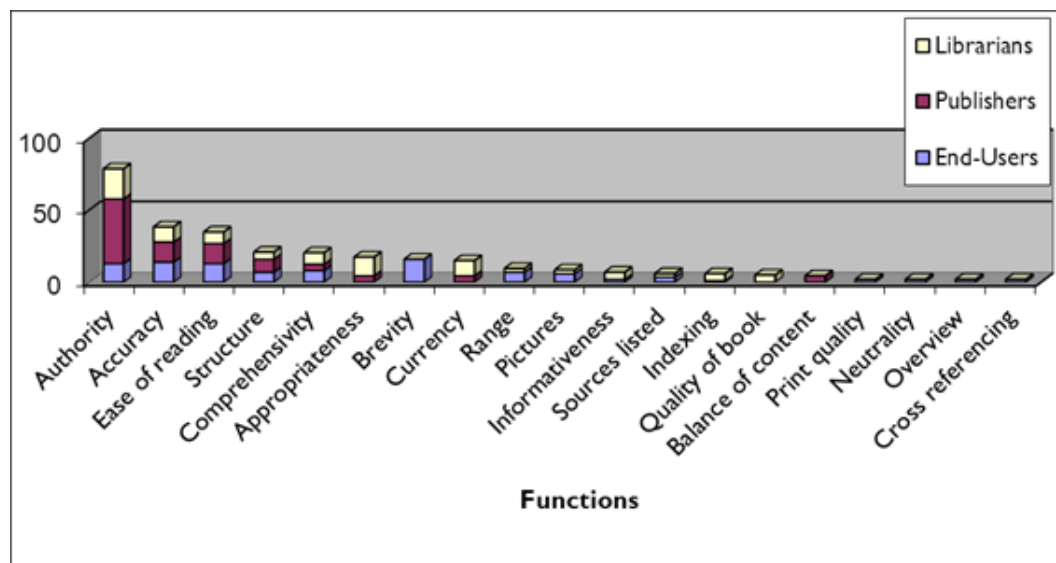

Figure 3: Functional attributes mentioned by participants, shown by numbers of mention and by percentage

Figure 3 was produced by categorising and counting the statements participants made in answer to the questions about an encyclopaedia's functional attributes, then placing each attribute in order of number of mentions. A 'mention' was identified as any descriptive term noted by any respondent in answer to the questions asked, so that if their answers included more than one functional attribute, these were counted separately. See Figure 2, above, for how descriptive terms and statements were tabulated before being counted.

A number of functions were valued prominently by all three groups: Authority, accuracy, ease of reading, structure / accessibility and comprehensivity were the most common. This seems consistent with other sources, for example, guides designed to help librarians select reference books for their collection. Louis Shores' influential publication *Basic Reference Books* (Shores 1939) or the contemporary Cassell and Hiremath's *Reference and Information Services in the 21st Century* (Cassell and Hiremath 2009), most commonly advise librarians to evaluate each title for authority, accessibility, clarity of purpose, good physical format, currency, style, originality, suitability for audience, accuracy and bias.[2] The same functions, authority, accessibility, accuracy and quality of publication recur to define

what an encyclopaedia should be valued for. This indicates that the notion of what a good encyclopaedia embodies is culturally shared among encyclopaedia users and creators.

Yet there are interesting differences both within and across the three groups. Readers were more likely than the other two groups to include as functions things which might be considered to be physical features, for example, 'cross-referencing' and 'indexing', an indication that the distinction between physical and abstract features is less important to them. They were also the only group to identify 'brevity' or 'conciseness' as a desirable attribute, perhaps reflecting a concern to conserve the time they spend seeking information, something not always recognised by the publishers who produce their reading material. It is notable that another item mentioned only twice by end-users and not at all by other users is 'neutrality' or 'lack of bias'. Given the high position of 'authority' and 'accuracy', the ability to trust the work is clearly a concern for all three groups, but it did not occur to any publishers or librarians to specify objectivity as desirable. Users were also alone in identifying 'range' as desirable function, using such phrases as 'Unlimited topics', 'All-encompassing knowledge', 'Varied information' and 'Broad range of coverage'. It may be that those with a professional identification with encyclopaedias, the publishers and librarians, took this quality (and others) for granted. Range, the notion that an encyclopaedia should embrace a variety of topics, or a single topic with a breadth of scope, is for some the very definition of the term 'encyclopaedia'.

The librarians also placed more emphasis on certain aspects of an encyclopaedia than other groups in their answers. A number of respondents were concerned with how the encyclopaedia matched the needs of its audience. Responses included phrases such as 'Content should be pitched at different levels i.e. brief and simple overview for beginners and longer, more in depth articles for researchers' and 'Foremost, I think an encyclopedia needs to be informative to the level it is aimed at, relevant'. These indicate the role librarians take as the intermediaries between the information source (the encyclopaedia) and the user (which, for an academic library, would be students). It was, however, also mentioned by two of the publishers, using the phrases 'Usefulness to the user' and 'The most effective reference publications are those that understand the needs of their target audience'. Of course it is a concern of the user too, but was perhaps reflected in some of the other responses, such as 'ease of use', or the equal number of users who responded that they expected 'brevity' or 'succinctness' as well as 'depth of information' or 'detailed information'. In all cases, the suggestion is that the encyclopaedia should cover its topic in a way that is just right for its audience. This is perhaps the defining feature of the encyclopaedia, sitting between the monograph, which may have too much detail, and the dictionary, which may not have enough.

When it came to the physical features expected in an encyclopaedia, there was a far wider range of answers within and across the three groups and a long tail of

characteristics mentioned only once or twice. Figure 4, below, shows all the items mentioned across the three groups.
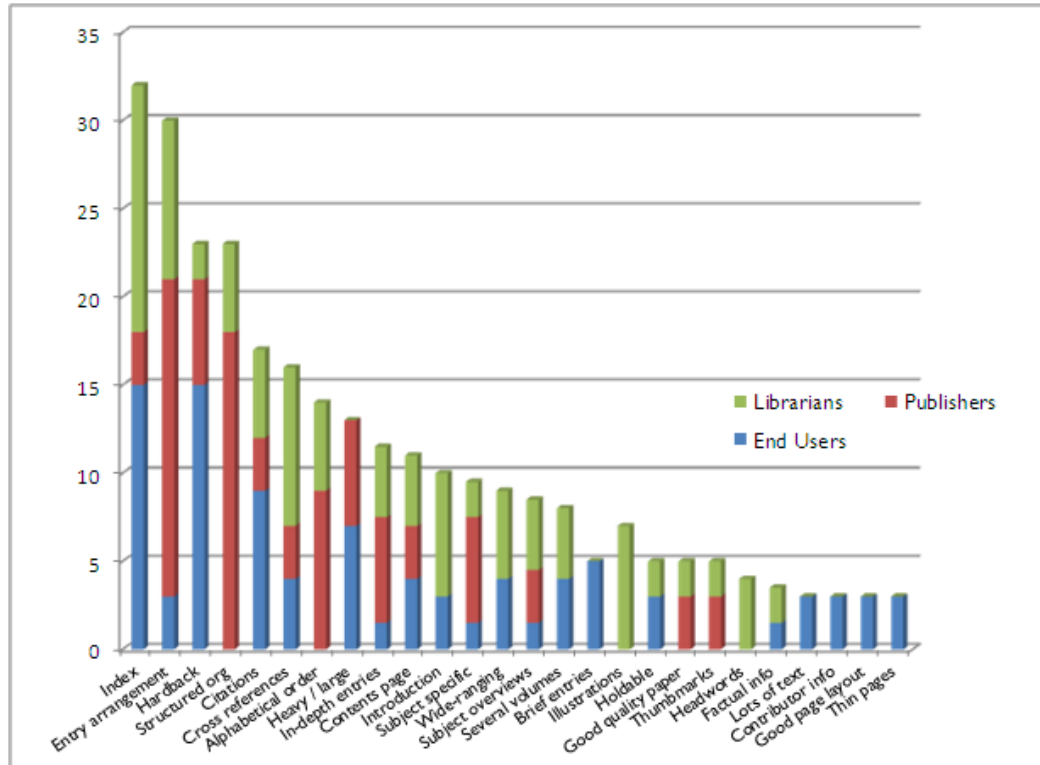

Figure 4: the most common physical features expected in an encyclopaedia

Figure 4 was produced by categorising and counting the statements participants made about an encyclopaedia's physical features, then placing them in order of most mentions. As with Figure 3, each descriptive statement or term was counted separately, even where respondents gave more than one answer to the question.

Across the three groups, the items most expected in an encyclopaedia are an index, arrangement into entries, citations, cross-references, contents page and alphabetical order. Also scoring highly is that it should be a hardback book of considerable size and weight. The higher-scoring features largely fall into two groups: those which help the user locate the information within the book, and those concerned with the encyclopaedia as a physical object. The fact that participants from all three groups mention features like index, entry arrangement, structured organisation and alphabetical order, indicates the strong identification of an encyclopaedia as a non-sequentially-accessed book, dependent on its structure to be useful. Meanwhile, the high score of hardback binding and large weight and size show that it is expected to be a substantial object. The physicality of the object is emphasised by some of the features that appear in the long tail such as cloth placemarker, thumbmarks and good quality or (conversely) thin paper. For these partic-

ipants, the encyclopaedia has a distinct physical identity separate from its informational content.

Some of the differences between the groups' choice of features relate to their articulacy on the subject: publishing professionals have a clearer notion of the parts which comprise a book and a more technical vocabulary than users, although interestingly, in places they identified the same feature in different words. For example, what one publisher described as 'an 'onion skin' approach to article layout, where a summary precedes more detailed sections, is very similar to what a reader called 'synopses for each section'. Even the differences between some of the tail of responses in fact show a similar approach: for example, the users' 'anything to make things clear' (summarised above as 'clarifying features') is an indication of wanting to find what they are looking for without difficulty. This relates strongly to the publishers' concerns around good structure and access, described in such ways as 'Digestible access', 'Organisation enabling information to be accessed non-sequentially' and 'Systematic organisation'. The 'lots of text', mentioned by one librarian and one user is consistent with the more-frequently mentioned 'compendiousness' and 'in-depth coverage'. Allowing for interpretation of the different language, there is a surprising consistency of opinion as to what physical form an encyclopaedia should take.

All three groups considered it important as to whether an encyclopaedia should be subject specific or cover a range of topics, that is, whether it should be, for example, 'an encyclopaedia of children's literature' or a general encyclopaedia attempting to cover all subjects. Both features are associated with encyclopaedias, but subject specificity was mentioned more often, by both users and librarians. Similarly, some of the answers regarding the length of an entry show a divergence of opinion. Reflecting the contradictory responses whereby end-users wished for the functional attributes of 'brevity' as well as 'detailed information', five end-users mentioned 'brief' or 'summarised' entries as features they would expect and a number of librarians and publishers expected 'in depth' (or 'essay style') entries. Such contradictions have historically concerned writers about encyclopaedias. In the same edition of *American Behavioral Scientist*, encyclopaedist Charles Van Doren described encyclopaedias as having a 'a tradition of dedication to truth and completeness' (Van Doren 1962), while cultural historian Jacques Barzun warned encyclopaedia compilers only to cover the ideas which 'have engaged the protracted attention of mankind' (Barzun 1962). In a sense this paradox embodies the central contradiction at the heart of the encyclopaedia: to be comprehensive, but only to select what is useful and trustworthy.

Even allowing for the differences in languages and priorities, the results indicate a shared understanding of what an encyclopaedia is among those who create, purchase and consult it. Among the three groups, there was substantial agreement that a good encyclopaedia might be expected to hold the following characteristics:
- be a substantial physical object

- contain information organised into entries
- contain articles in alphabetical order
- organised in such a way that items of information are easy to find
- treat topics in some depth
- be accurate
- be authoritative
- be well-written
- be comprehensive
- presented in a manner appropriate for its audience.

Although many of these features might be found in other types of book, aggregated they represent a very distinct type of book, recognisable across the contemporary encyclopaedia communications circuit. This is intriguing, particularly when certain physical features may seem old-fashioned when most publishers' encyclopaedia profits are now made online (Bookseller 2011). All three groups have a clear idea what an encyclopaedia should be like and how it should function, and there is a certain amount of consensus across all three groups. Their vision of the encyclopaedia is not a revolutionary one, but it demonstrates that a culturally shared notion of the encyclopaedia exists among its creators, communicators and users. At a time when, as Sundin and Haider (2013) put it, 'the use of encyclopaedic knowledge has become different, always available and in constant competition with other sources', in this study, all parts of the encyclopaedia's communications circuit still identify it as a distinct form of the book.

Encyclopaedias in the Digital Age

Yet, the existence of the encyclopaedia online cannot be ignored. Without prompting, some respondents suggested features only to be found in an online encyclopaedia, such as 'a decent search feature' and 'graphic enhancements' (publishers) and 'Attractive online display without too many flashing distractions' (librarians), not to mention the two end-users who responded that an encyclopaedia should be online (one using words not repeatable in this article). As mentioned previously, the participants are perhaps more likely to have used online encyclopaedias than hard copy even while they identify physical features, such as hardback binding and cloth placemarkers which would only be found in a physical object.

Evidence suggests that opportunities to use hard copy encyclopaedias are becoming rarer. Libraries have increasingly directed their scarce resources away from hard-copy encyclopaedias, towards online products, searchable and available 24-hours a day without the need for staff (Bradford 2005; Heintzelman, Moore & Ward 2008; O'Gorman & Trott 2009). Publishers increasingly release their titles

in online form only (Bond 2008; Jones 2008) and the decline in print sales in the late 2000s was noted by one publisher as 'dizzying' (Danford 2009). Social media presents challenges too. When the answers to questions can be crowdsourced through blogs or social media sites such as *Twitter* and *Facebook*, the question arises as to why anyone would need reference source mediated by the publication process. Featherstone and Venn (2006) suggest that social media sees itself as offering an opportunity for 'de-authorization of the cult of experts', in particular *Wikipedia*, which since 2001 has offered encyclopaedia-style articles, written by voluntary contributors and editable by almost anyone, for free via the web (Wikipedia 2013a).

According to Haider and Sundin (2010) 'One could be tempted to think that the encyclopaedic notion would go out of fashion when (Web) search engines create instant access to most digital content.' Yet the desire to find trustworthy information on a topic gathered together under a specific article heading has persisted and continues to be catered for. A quick glance at three examples, *Britannica Online* which remains, more or less, an editorially mediated publication online, *The Stanford Encyclopedia of Philosophy (SEP)*, which is looser in publication structure, has no hard copy roots, but is written by experts and *Wikipedia*, show that they imitate hard copy encyclopaedias: they divide their contents into articles, use both bold and sub-headings, employ summary sections or synopses, include bibliographies and citations, offer alphabetical access, indexes and cross-references. This is consistent with Bolter and Grusin's concept of 'remediation' (2000) whereby new media formats ape older formats in the course of refashioning them. Of course online encyclopaedias do not have hard copy bindings or cloth placemarkers, but the pages still look like encyclopaedia pages. Many of these features might be considered redundant when the contents are accessible through a free-text search, but readers still want to find information under discrete article headings, to find further sources of reading, via citations and references, and to draw relationships between the topics they cover using cross-references. Moreover, all three describe themselves as 'encyclop(a)edias', suggesting that they desire the associations connected with the term.

Abstract notions of accuracy and authority also persist into digital forms. The background material on each site (particularly copious on *Wikipedia*) promotes the contents of each online encyclopaedia. *Britannica*, for example, announces 'In a world where questionable information is rampant, we provide products that inspire confidence, with content people can trust' (Britannica 2013), illustrating the point that 'Old trustworthiness – tied up in tradition, expertise and local relevance – gains new currency in networked settings' (Sundin & Haider 2013). *SEP* says 'From its inception, the SEP was designed so that each entry is maintained and kept up to date by an expert or group of experts in the field.' (*Stanford Encyclopedia of Philosophy* 2013). While *Wikipedia* emphasises that 'People of all ages, cultures and backgrounds can add or edit article prose, references, images and

other media' they also add that content needs to be 'verifiable against a published reliable source' and that older articles, which have seen additions from 'experienced editors' are more reliable than newer ones (*Wikipedia* 2013a). There is an immense amount of background material on *Wikipedia* explaining and justifying their publishing model as a good method of producing accurate encyclopaedia entries (far more so than in *Britannica*, where the publication's 300-year history and well-known name might be assumed to speak for itself). Their argument is not that accuracy and authority are not important in an encyclopaedia, but that they can be provided by an alternative publishing model. Even the much-quoted *Nature Magazine* comparison between *Wikipedia* and *Encyclopaedia Britannica* (Giles 2006) was essentially a competition to prove the accuracy of one source over the other.

There are valued notions associated with the encyclopaedia that *Wikipedia* does not embrace. Unlike *Britannica* and *SEP*, there is no editorial masterplan dictating how it should be structured and the scope it should embrace. This has attracted criticism, suggesting that its coverage is skewed towards certain types of topic 'where there is a wide distributed knowledge base and a large a pool of people with time on their hands to contribute' (*Publishers Weekly* 2009). One of *Wikipedia's* own boasts is that it embraces a wider range of topics than those constrained by editorial or academic needs, and there is no limit to its potential length or the number of topics it can embrace. Indeed, the 'What *Wikipedia* is not' page states 'there is no practical limit to the number of topics *Wikipedia* can cover' (*Wikipedia* 2013b). The process of continuous, collaborative revision might, over time, mean that the encyclopaedia as a whole, or any topic or single article could grow infinitely over time as more people contribute. This contradicts the possibly defining function of the encyclopaedia, to cover a subject in depth, but with concision and at the appropriate level for a specific audience. Yet there is more editorial intervention in *Wikipedia*'s structure than might be thought. A Quality Assessment team assigns a classification tag to each article which might suggest it is, for example a 'stub' or a 'featured article' (*Wikipedia* 2013c) while the 'Categorization' guidelines, among many other suggestions of how volunteers should approach writing an article, (*Wikipedia* 2013d) are copious.

Concluding Remarks

This article illustrates the features expected in an encyclopaedia by those who produce, communicate and use them at a time when this form of the book is increasingly coming to exist in online form only. The participants in the research identify qualities and attributes which can be seen or are boasted of in prominent digital encyclopaedias, suggesting that the online information offering draws much from the hard copy world which preceded it.

While it appears, from these observations, that publishers aim to meet user expectations of an online encyclopaedia by echoing or emphasising some of the physical and abstract features of the hard copy form of the book, there is further research to be done in this area. In a world where highly sophisticated approaches to web design and usability exist, it would be interesting to explore the decisions made by publishers in creating online encyclopaedia environments. Does their design reflect in any way the iconic physical item? Similarly, while there is very little research into user-behaviour in relation to hard copy encyclopaedias (Bradford 2005 is a rare exception), user-studies could be carried out, or metrics examined, to explore how their online equivalents are used. And it would be interesting to explore whether design and use of encyclopaedias differed from any other online reference sources. These questions, however, were beyond the scope of the research used in this article.

The generic features of the encyclopaedia remain recognisable to those most clearly connected to its production and consumption. The clarity of its identity seems only to be confirmed by the fact that many remain in digital forms. Exploring how far the characteristics of different types of books persist and alter in the online world has much to tell us about publishing, communication and reading. The suggestion that book types can be more than objects, can transcend the physical and persist into the digital world adds an intriguing frisson to our understanding of book forms' relationships to their users. It suggests that users continue to bring expectations developed in the physical world to the way they interact with their digital proxies. For many interviewed as part of the research for this article, the concepts of creating, organising and finding encyclopaedic knowledge developed with the hard copy book. However, digital natives were also among those interviewed, and they still recognise the encyclopaedia as a distinct book form. How this might develop in the future remains to be seen and there is no doubt that information seeking and provision is in a state of flux. However, the appetite for authoritative and accurate content organised into easy-to-navigate articles appears not to have diminished, and it continues to be provided for online.

Katharine Schopflin recently successfully defended her PhD thesis at University College London's Department of Information Studies. Her topic was the nature of the encyclopaedia as a form of the book, exploring both the qualities associated with a successful example of the encyclopaedia and the physical features characteristic and unique to it. She is additionally a library professional practitioner, currently working as a knowledge manager for a membership organisation in London. She has published numerous articles in the information press and is the author of *A Handbook for Media Librarians* and the upcoming *A Handbook for Corporate Information Professionals* both published by Facet Publishing. E-mail: katharine.schopflin@gmail.com.

Notes

1   The research for this article was originally carried out as part of a PhD project which considered a broader spectra of questions.
2   An analysis of 11 such guides appeared in the PhD thesis from which the other research in this chapter was taken.

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Knowledge and the Systematic Reader:
The Past and Present of Encyclopedic Learning

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Abstract

Though digital media have unquestionably affected the features and functions of modern encyclopedias, such works also continue to be shaped by factors thoroughly conventional by the end of the historical Enlightenment. As William Smellie, editor of the first *Encyclopædia Britannica* (1768-71) wrote, "utility ought to be the principal intention of every publication. Wherever this intention does not plainly appear, neither the books nor their authors have the smallest claim to the approbation of mankind." The "instructional designers" and "user-experience specialists" of the online *Britannica* are the inheritors of all those authors and editors who before and after Smellie's time devised different plans and methods intended to maximize the utility of their works. The definition of utility and with it the nature of encyclopedic knowledge continues to change both because of and despite technological difference; if digitization has in some ways advanced the ideals of Enlightenment encyclopedias, then it has in other ways allowed for the re-inscription of certain flaws and limitations that encyclopedias like the *Britannica* were specifically designed to overcome. By examining not only what one might read in the encyclopedia but also the ways in which one might read it, this article demonstrates the extent to which the notion of encyclopedic utility depends on historical context.

Keywords: Systematic reading, encyclopedism, encyclopedias, *Encyclopædia Britannica*, Enlightenment, knowledge production, history of reading

Introduction

Since its inception in 1768, the owners of the *Encyclopædia Britannica* have included printers and engravers, bookbinders, bankers, publishers, philanthropists, and one former United States senator. Its chief editors have been, among other things, apothecaries, clergymen, geologists, journalists, academics, and philosophers. Conceived by Colin Macfarquhar and Andrew Bell as a national intellectual monument and answer to the French *Encyclopédie,* the first printed editions were sold out of Macfarquhar's offices on Nicolson Street in the Old Town of Edinburgh. Now, the international headquarters occupy a large, redbrick building in downtown Chicago, and the company prints no new editions at all.

These headquarters and their virtual counterpart at Britannica.com appropriately reflect a history of generic, ideological, and technological change. The shelves along the lobby's north wall contain a selection of print products including a limited edition of the fifteenth and final 32-volume set as well as a replica of the three-volume first edition completed in 1771. The two literally bookend the working *Britannica*'s historical materiality; the gilt edges of the former and faux-foxing of the latter equally mark them as nostalgia or "prestige" purchases divorced from modern encyclopedic knowledge production. The sets also sit side-by-side in a section of the *Britannica* online store dedicated to books, atlases, and almanacs. Clicking to "learn more" about the limited edition, however, leads only to a 404 error (Educational Learning Books 2013). The past is present, but the link is broken.

At the same time, the quotations from notable *Britannica* authors and editors adorning the lobby's south wall promote a sense of institutional continuity. The opening words of William Smellie's preface to the first edition, placed towards the top left, articulate a philosophy that to this day remains central to the encyclopedic project. "Utility," according to Smellie, "ought to be the principal intention of every publication" (Smellie 1771: v). The company may have moved beyond print to become a "pioneer in digital education," but they still claim to create their new knowledge products as they have "*for many years*…by collaborating with experts, scholars, educators, instructional designers, and user-experience specialists; by subjecting their work to rigorous editorial review; and by combining it all into learning products that are useful, reliable, and enjoyable" (Britannica Today 2013). This description would not have been out of place in Smellie's time. The final phrase recalls Horace's oft-stated belief that literature must be *dulce et utile*, and just as it did in the first *Britannica*, usefulness has pride of place.

Though digital media have certainly affected its features and functions, then, the contemporary encyclopedia also continues to be shaped by factors conventional by the end of the historical Enlightenment. The "instructional designers" and "user-experience specialists" of the online *Britannica* are the inheritors of all those authors and editors who for centuries devised different plans and methods

intended to maximize the utility of their works. As Jutta Haider and Olof Sundin observe, "a line can be drawn through the centuries from various earlier manifestations of the Enlightenment ideal up to today's online encyclopaedias," but "on the other hand, there is the position of these sites existing within the networked space of the Internet" (Haider and Sundin 2010). The definition of utility and with it the nature of encyclopedic knowledge continues to change both because of and despite that technological difference. If digitization has in some ways advanced the ideals of Enlightenment encyclopedias, then it has in other ways allowed for the re-inscription of certain flaws and limitations that encyclopedias like the *Britannica* were specifically designed to overcome. By examining not only what one might read in the encyclopedia but also the ways in which one might read it, this article will demonstrate the extent to which the notion of encyclopedic utility depends on historical context.

Forms and Functions

The transition from the seventeenth to the early eighteenth century marked the beginning of a long-standing shift in the ambitions and design of the encyclopedic project. "Before and during the seventeenth century," Richard Yeo writes, "the original Greek concept of encyclopedia was available, though it had become highly unstable, oscillating between the ideas of fundamental training and near universal knowledge" (Yeo 2007: 49). The distance between the two ideas left ample room in the literary marketplace for works that despite vastly different features and functions equally trafficked in encyclopedic knowledge. Relatively inexpensive vernacular guidebooks supposedly complete in a few hundred (or fewer) pages in quarto often made similar promises about providing access to the round of education as did much larger Latin works composed of multiple folios.[1] The differences of presumed educational attainment, price, and marketability as well as organization, breadth, and depth that ran across the spectrum of such works represent a relatively stable set of generic threads that encyclopedists have spent generations periodically unraveling and then winding back together.

Issues of scope and arrangement have played a particularly large part in shaping encyclopedic texts. Print technology created numerous opportunities for generic growth and variation as the limitations of materiality sometimes set the encyclopedic project at odds with itself. Encyclopedias, as Jeff Loveland observes, generally grew in length from 1690 to 1840 as "conceptions of [them] as repositories of indefinite extent became more widespread" and nationalistic associations made size a sign of prestige (Loveland 2012: 233-34). Interminably long production times, necessarily high prices, and the possibility of overwhelming rather than enlightening readers, however, could impede the efficient dissemination of knowledge. Encyclopedists, therefore, often had as much reason to contract their works as expand them, and the same year in which the proprietors of the *Britanni-*

ca embarked upon their largest encyclopedia to date (the eighteen-volume third edition, produced from 1788-1796) also saw the publication of the three-volume *New Royal Encyclopædia* – in essence a plagiarized *Britannica* that improbably claimed on the title page of its second edition to comprehend "all the material information that is contained in Chambers' *Cyclopædia*, the *Encyclopædia Britannica*, and the French *Encyclopèdie*" (Hall 1791).

Brevity, though, could also diminish utility. John Barrow's *A New and Universal Dictionary of Arts and Sciences* (1751), for example, claimed to comprehend all the parts of all the branches of knowledge in the space of a single volume. The 576 folio pages of his dictionary predictably left out a great deal of valuable information – so much so that the supplement published by the proprietors three years later outdistanced the original by nearly 200 pages. This "supplement" expanded some entries, updated others, and introduced entirely new ones initially omitted. Together, the two volumes supposedly created one complete work, but the single encyclopedia now came with a burdensome double-alphabet; readers had to move back and forth between duplicate entries in each volume whenever cued by a "*dict.*" annexed to articles in the supplement. The still small space of even two large volumes, moreover, continued to demand an exclusionary hierarchy. "As it has been our principal view to render this work useful to the reader," Barrow explains, "those branches of learning, which are of more immediate use in life, are more largely treated of than those of mere curiosity." With space at a premium, Barrow gave priority to the mechanical arts (Barrow 1754: 13).

The *New Royal Encyclopædia* likewise sacrificed content and functionality, but it did so in different ways. Though copied largely verbatim from the second *Britannica,* the *New Royal*'s system of acoustics is only half as long; it excludes, among other details, a conjecture regarding the tones produced by the bass-strings of a harpsichord as well as what the *Britannica* identified as "curious" descriptions of Joseph Priestley's experiments "concerning the tone of electrical discharges" ("Acoustics" 1778: 1.61). Nor are its systems and treatises the only truncated elements: though several "detached" parts of knowledge not included in the *Britannica* have been added, more have been excised. The second edition of the *New Royal* does not even retain all of the entries provided in the first. Gone, for example, are the "abacay," a Philippine parrot; the "abacot," an ancient English royal cap of state; and "abadir," a Carthaginian title for first-order gods and the name given to the stone swallowed by Cronus in place of Zeus. A further nine entries between "abaddon" and "abarticulation" vanish between the first and second editions without explanation; presumably they and many others fell by the wayside in order to make room for materials deemed more important. The editors also greatly reduced the number of paragraph breaks and the amount of whitespace throughout the whole, and while these measures too may have helped to control overall length, the many unbroken blocks of text both strain the eye and obscure organizational logic. Minimized margins, furthermore, leave no room for

the headings, minor illustrations, and plate references of the original treatises. To those who spent more time looking for information than learning it because of these space-saving and therefore cost-cutting measures, the shorter, more affordable work may actually have been the less useful.

At least, though, members of the middling classes could hope to overcome the minimum bar of entry. At four guineas, Yeo notes, Chambers' *Cyclopædia* (1728) would have cost the average family about a month's income, and the £12 asked for the first full *Britannica* forty years later made it a luxury item as well (Yeo 2001: 50-51). At roughly £3, the *New Royal* was still not inexpensive, but compared to a price of £19 for the second *Britannica* it was something of a bargain. The editors of the *New Royal* quite sensibly put its relative affordability – "near ten guineas cheaper" than the cheapest of its competitors – at the top of a list enumerating its particular advantages.[2] In their cost, style, and content, then, the major encyclopedias of the Enlightenment might have targeted the higher strata of society, but some saw potential value (and profit) in extending a more limited brand of encyclopedic learning to those of lesser means.

The promise of broader appeal featured regularly in eighteenth-century title pages and prefaces and remained an important part of an alternative encyclopedic tradition in the nineteenth century. Barrow, for his part, claimed to render all the arts and sciences "easy and familiar to the meanest capacities," and not long after, Benjamin Martin began issuing numbers of his *General Magazine of Arts and Sciences* (1755-1765), by which he hoped to make his subscribers proficient in all the useful arts and sciences at the rate of sixpence for one half-sheet upon a science per month (Martin 1755: 1.iv-vi). Though Martin's particular plan was not widely imitated, publishers on occasion continued to look to the periodical as a means by which knowledge of the arts and sciences could be circulated widely and inexpensively. Even as Victorian encyclopedists and dictionary-makers developed "more scientific and rigorous practices," titles such as the *British Penny Magazine* (1826-1845) sought "to provide moral, cheap and, crucially, useful literature through 'the imparting useful information to all classes of the community'" (Weller 2008: 201). Aimed largely at the working classes, the illustrated magazine cost a penny per number and came with footnotes and cross-references that "created an encyclopaedic feel" and encouraged subscribers to bind each year's issues together and keep them as single reference works. Meanwhile, the 127 parts of the seventh *Britannica* issued monthly over roughly the same period (1827-1842) cost six shillings apiece for a combined total of just over £38.

All of these tensions persist within and across digital domains. Though far less than the $1400 formerly asked for the printed edition, the $69.95 annual membership fee for individual access to *Britannica Online* still costs $69.95 more than access to *Wikipedia* – or, to give it its full name, *Wikipedia: The Free Encyclopedia.* Both organizations (as well as independent observers) have contested the extent to which price does or does not bear on quality. Both also serve, or seek to

serve, a wider readership than did the flagship encyclopedias of the Enlightenment. *Britannica* continues to market different versions of its encyclopedias to different age groups: the premium site is aimed at educated adults while other online editions address the needs of children, secondary, and post-secondary students. Though the English *Wikipedia* acknowledges the variation of its audience and divides readers into three grades (general, knowledgeable, and expert), it does not maintain multiple versions of its own content; indeed, the style guidelines suggest that articles "should be understandable to the widest possible audience. For most articles, this means understandable to a general audience." In the case of particularly technical content, the guidelines further encourage authors to "write one level down"– that is, they should "consider the typical level where the topic is studied (for example, high school, college, or graduate school) and write the article for readers who are at the previous level" (Wikipedia contributors 2013). No single encyclopedia, in short, can be all things to all readers; authors, editors, and institutions still operate within certain conceptual and practical constraints that drove the development and generic variation of encyclopedias in the eighteenth and nineteenth centuries.

Ironically, the *absence* of some of those constraints has also given new life to old arguments about encyclopedic utility. Physical size – once a major consideration for encyclopedists – no longer matters. This frees online encyclopedias to do, comprehend, or in other ways be more than could their printed predecessors, but it also results in a high potential for mission creep. The editors of *Wikipedia* have therefore defined and now attempt to maintain somewhat stricter generic boundaries than did many of their Enlightenment counterparts. "*Wikipedia* is not a paper encyclopedia," begins the first section of an article dedicated to explaining what *Wikipedia* is not. "There is no practical limit to the number of topics *Wikipedia* can cover or the total amount of content. However, there is an important distinction between what *can* be done, and what should be done" (Wikipedia contributors 2014). Ten entries under the subheading of "encyclopedic content" on the same page list some eighteen genres and functions from which the project seeks to distinguish itself; of these, nearly half were once either fully integrated parts of the genre or experimental features introduced and abandoned over the course of its development in the eighteenth and nineteenth centuries. Original research appeared in later editions of the *Britannica*; Diderot and D'Alembert used the *Encyclopèdie* to advance controversial political, economic, and religious ideologies; Benjamin Martin included news of the moment with the monthly installments of his *General Magazine of Arts and Sciences* (1755-1765); and Dennis de Coetlogon insisted that with the help of his treatise on surgery in *An Universal History of Arts and Sciences* ("and some Practice"), aspiring pupils could master the art (De Coetlogon 1745: 5). According to "What Wikipedia Is Not," though, *Wikipedia* is not a publisher of original thought, a soapbox, a newspaper, an instructional manual, or a textbook.

Wikipedia policy, then, still (loosely) defines the encyclopedic as something less than universal both despite and because of its freedom from the material realm. Though the content of the current English-language *Wikipedia* would occupy roughly sixty times the space of the last printed *Britannica* and dwarfs even the most expansive Western encyclopedias of the last four centuries, the setting of limits nevertheless remains crucial to the encyclopedic enterprise. Smellie's insistence that a universal dictionary of arts and sciences need not trouble itself with history and biography – subjects that *could* be comprehended by the *Britannica* but that in his opinion already had adequate housing in separate collections – is part of the same debate that now goes on between *Wikipedia*'s associations of Deletionists and Inclusionists. Smellie left the *Britannica* in part because the proprietors demanded the inclusion of materials he deemed beyond the scope and purpose of a universal dictionary of arts and sciences; many *Wikipedia* editors are now no less willing to stand upon similar principles. The occasionally vitriolic contest between the two associations hinges in large part upon the potential and the potential dangers of the new medium: while the Inclusionists advocate for "building the world's largest and most complete professional encyclopedia," the Deletionists wish to maintain "a quality encyclopedia containing as little junk as possible" (Meta contributors 2013; 2014). That the category of "junk" should comprehend overtly promotional entries, unverifiable information, or significantly subpar composition seems uncontroversial, but their assertion that subjects lacking in sufficient "general interest" or "notability" have no place in a "quality" encyclopedia regardless of a lack of size restrictions reveals an irresolvable ambiguity that inheres and has always inhered in the encyclopedic project: the distinction between all there is to know and all that is worth knowing.

The editors of the *Britannica* likewise remain wary of the dangers posed by digital technology to what they define as the purpose of the encyclopedia. Theodore Pappas, the company's Chief Development Officer and Executive Editor, similarly describes these dangers in terms of genre. "We do updates every day," he explains, "but we are conscious of not converting the encyclopedia into a newspaper or blog [in which] you would lose the narrative flow of an entry because you have simply tacked on a new sentence every week" (Pappas, 2013 informal interview, 13 June).[3] Pappas' association of generic integrity with "narrative flow" reflects a defining distinction between knowledge production and information gathering; in order to maintain the integrity of the encyclopedia as such, the editors have elected to combat or compromise with the sometimes counterproductively high periodicity enabled by the new medium (and perhaps expected or demanded by its users) via a continued emphasis on the collection of "evergreen" information and its integration into synthesized treatments of significant individuals, entities, or events. On 26 June 2013, for instance, the United States Supreme Court ruled section three of the Defense of Marriage Act (DOMA) unconstitutional under the Due Process Clause of the Fifth Amendment. Within hours, the

case (United States v. Windsor) had its own brief entry, but the ruling also quickly became part of longer treatments of "marriage law" and "same-sex marriage," both of which place the court's decision in broader religious, social, political, and international contexts.[4] Rather than merely updating the site to record a moment in history, the editors moved to reflect the ruling as an historical moment.

The front page of the digital *Britannica* nevertheless does acknowledge the immediacy of the modern information environment that it necessarily occupies and must constantly confront. The editors' efforts to avoid the conversion of the encyclopedia into a newspaper or blog have to some extent resulted in their conversion of the blog and newspaper into encyclopedic paratexts or paragenres. A link to the *Britannica Blog* prominently occupies the third position on the right-hand side of the top bar of the academic edition's homepage – just after "home" and "browse." A team of *Britannica* editors manages a wide range of entries and responses that ideally strive towards rationality and "aggregate" objectivity but are not thoroughly checked for factual accuracy; the blog encourages discussions of topical issues in addition to more conventionally encyclopedic fare, and its writers have supposedly been given "a lot of freedom" with respect to the substance and tone of their posts. In other words, the blog frees the encyclopedist from modern encyclopedic conventions while simultaneously providing opportunities to network established encyclopedic content with records of personal experiences, current events, and external research sources. One editor's first-person account of a recent trip to two small towns in "Tornado Alley" contains links to *Britannica* articles on tornadoes, the Great Plains, the Arctic Ocean, and the Gulf of Mexico in addition to the National Oceanic and Atmospheric Administration's Storm Prediction Center website, a separate Center page on tornado safety, and a scholarly article on microphysics and tornadogenesis. Another post marks the fiftieth anniversary of the 1963 March on Washington by showcasing a selection of images of the original event taken from the *Britannica*'s media collection.

Links to articles from the *New York Times* and *BBC News* in the right-hand column of the homepage serve a similar function. These links more straightforwardly alert users to the encyclopedia's engagement with matters of the moment and tacitly suggest subjects for further inquiry within the database.[5] This strategy, as suggested above, is not exactly new; the weekly publication of *The Penny Magazine* often allowed it to choose subjects reflective of recent events. The issue for February 3, 1838, for example, opens with a five-column article on the orangutan that begins by informing readers of the Zoological Society's acquisition of a new living specimen "within the last few weeks" (*The Penny Magazine* 1838: 41). Digital media, though, have allowed the major encyclopedias to keep abreast of newsworthy events and to do so much more rapidly. On occasion, the items in the *Britannica Online* news article feed will actually align with those in an additional front-page section featuring new and recently updated entries. Such alignments advertise the encyclopedia's synchrony with current events (which enhanc-

es encyclopedic utility) while reifying generic distinctions and hierarchical primacy. The selection of the new or newly revised encyclopedia entries is placed above and apart from the links to news articles, and though the former may contain subjects in common with the latter they are typically interspersed among others lacking any apparent connection. The news stories, moreover, refresh frequently while the selection of encyclopedia entries changes not more than once a day. Together, the two elements suggest the role of the news in generating encyclopedic content and the ways in which the *Britannica* situates that news in the broader context of durable "encyclopedic" knowledge.

Both *Britannica* and *Wikipedia*, then, maintain the encyclopedia's conventionally curatorial disposition towards information management and knowledge production. The fundamental function of the encyclopedia is still the distillation of the "useful" from what would otherwise be an overwhelming deluge of information. The two projects, though, apply very different and sometimes internally inconsistent standards of usefulness the disparities of which are amplified by the practical limitlessness of "size" in a virtual space as well as the fact of restricted versus open editorial arbitrage. *Wikipedia*'s collaborative model allows for a more amorphous definition of utility that may be said to better or at least more directly reflect the wide and changeable interests of its users; it might therefore seem the more democratic, progressive, or modern of the two encyclopedic projects. The realities of current Wikipedian editorial demographics, however, to some degree complicate such an assessment. In at least one respect, *Wikipedia* cleaves very closely to a much older convention of encyclopedic knowledge production: as of April 2012, 90 per cent of its editors were male. As Sue Gardner, Executive Director of the Wikimedia Foundation, writes, it "shouldn't surprise anyone that [Wikipedia] would fall victim to the same gender-related errors and biases as the society that produces it" (Gardner 2013). With only 9 per cent of its editors self-identifying as female, any agenda collectively pursued or any emergent sense of what constitutes "useful knowledge" must be influenced by this disparity.

Ironically, women were absolutely crucial to what Pappas sees as the *Britannica*'s pre-digital version of user-generated feedback and content production. Beginning in 1936, purchasers of the full encyclopedia received a number of coupons each one of which entitled them to a typed, cross-referenced, and bound report on a subject of their choosing. By the 1960s, the *Britannica* Library Research Service – then the largest private research service in the world and since 1947 under the direction of Virginia Stenberg, a graduate of Smith College – employed over seventy college-educated women charged with visiting libraries and research institutions across the country in order to answer the queries submitted. In 1968, the Charleston *News and Courier* reported that Stenberg and her "answer girls" (then as now, contributing to the encyclopedia did not always defend against sexism) received 175 000 requests each year; during peak periods, subscribers sent as many as a thousand per day (McCormack 1968: 2-C). These queries and reports,

Pappas explains, helped the editors determine what subjects needed additional coverage in the encyclopedia proper.

Britannica received and responded to these coupons until the early 1990s. An encyclopedia, though, must "evolve with the times," and in 2008 the company made user-generated content and editorial suggestions part of its mission to make *Britannica Online* "a welcoming community for scholars, experts, and lay contributors" ("Britannica's New Site" 2008). A strict editorial hierarchy remains in place, however, and according to the submission guidelines, relatively few user contributions will meet their standards – standards that apply to subject as well as content (Submission Guidelines 2014). The *Britannica* is thus more open now than in the past, but it continues in general to follow the agenda set by Tytler and Macfarquhar at the end of the eighteenth century: professionals and experts ultimately decide what does and does not constitute the "core knowledge" needed "to understand the world around us, past and present" (Pappas 2013). *Wikipedia*'s standards are, in terms of subject matter, much looser, but as I have indicated not everything can have a place in even the world's largest encyclopedia. An off-site archive of deleted pages reveals that the editors drew the line at a New York band called The French Kings, a magazine published for twelve years in Oxford, Mississippi entitled *Southvine*, and the birth of a beagle named "Dallas Southard" in Benson, North Carolina.[6] In the event that "some catastrophe so great as to suspend the progress of science, interrupt the labors of craftsmen, and plunge a portion of our hemisphere into darkness once again"– a moment described by Diderot as "the most glorious" for an encyclopedia (Diderot 2001: 290) – neither *Wikipedia* nor the *Britannica* would recall any of these to human memory.

Given the traditional function of the encyclopedia as a storehouse of civilizational knowledge, the *Britannica*'s far more narrowly defined criteria for notability are a matter of potentially historic importance. "An encyclopedia," James Creech writes, "must fix the totality of knowledge in one moment, like an image of the national mind that will itself become a stable measure by which future progress can be gauged" (Creech 1982: 189). Though ongoing updates mean the *Britannica* is rarely if ever absolutely fixed, it will continue to provide what Chambers in his *Cyclopædia* called a "survey of the Republick of Learning" and the "boundary that circumscribes our present Prospect" (Chambers 1728: n.p.). The Library of Congress, which holds every printed edition of the *Britannica* produced since 1768, has agreed to accept an annual donation to its archives in the form of a digital snapshot of the *Britannica* database as it stands on the first day of January in every year going forward. This initiative will maintain and make available to posterity an "unbroken record" that bridges the encyclopedia's print and digital forms (Pappas 2013).

Building that bridge and extending it into the future, though, will require the keepers of encyclopedic knowledge to continually overcome the challenges of digital preservation. As the final report of the Blue Ribbon Task Force on Sustain-

able Digital Preservation and Access put it, "without preservation, there is no access," and the technological, institutional, and economic obstacles to the long-term sustainability of digital information remain significant. The move of the *Britannica* from print to digital entails a shift from what the task force describes as a fundamentally linear preservation model focused on physical conservation to a recurrent model in which the merits of preservation must be reevaluated in accordance with technical developments and the persistent threat of obsolescence (Blue Ribbon Task Force on Sustainable Digital Preservation and Access 2010: 25, 29).[7] The digital encyclopedia, in other words, is itself more susceptible to data loss or wholesale irretrievability as a result of the same processes of information evaluation and prioritization that are its own core functions in any medium. Just as new editions or updates pronounce some information obsolete or insignificant by declining to carry it forward, so too might entire encyclopedias be deemed not worthy of re-mediation.

Obsolescence and data loss have of course long governed the dynamics of encyclopedia production. Although several factors (including availability, cost, and reputation) could and did extend the lives of "old" encyclopedias beyond their time – many eighteenth-century readers continued to prefer early editions of Chambers' *Cyclopædia* to other, newer universal dictionaries –time inevitably degraded utility. Access to antiquated dictionaries could be had with relative ease, but rarely if ever do the prefaces or dedications to eighteenth or early nineteenth-century encyclopedias suggest that such access was desirable.

If digitization has on the one hand largely resolved one aspect of conventional encyclopedic obsolescence – perpetual updates obviate the need for successive editions, so the encyclopedia never need be out of date again (at least not for very long) – then on the other hand it has necessarily re-problematized issues of long-term, higher-order obsolescence related to potentially unstable or asymmetrical stakeholder interest. The priorities of archivists and audiences cannot always be anticipated, and a later Pepys might not deem having access to a thirty, forty, or hundred-year-old digital encyclopedia worth his time's equivalent of 38 shillings. Indeed, any single encyclopedia from some near or distant future's past might not by itself merit the time, effort, or cost of preservation, digital or otherwise. In continuing to hold every printed edition of the *Britannica*, and furthermore agreeing to accept digital versions as well, the Library of Congress has on behalf of the American government and nation implicitly conferred on such individual editions the "permanent" value once optimistically proffered by static works like *A New and Complete Dictionary*, insofar as those editions are part of a larger and dynamic series that has and always will have been preserved in its entirety.

Systematic Readers, Systematic Reading

That value results in part from a method of reading encyclopedias made possible only by the passage of time. Diachronic systematic readings of the encyclopedia have the potential to reveal the derivations of concepts or cultural phenomena in a limited informational context. In "Suicide on My Mind, *Britannica* on My Table," for example, American thanatologist Edwin Shneidman traces the concept of "suicide" from its description as "self-murder" in the second *Britannica* (1777-1784) through each of the fourteen articles on the subject in every edition up to and including the fifteenth.[8] The record that emerges reveals not only the history of suicide but also a meta-history of the changing means and methods by which the act and its epiphenomena are explained. The second edition is overtly religious, legalistic, and condemnatory whereas the morally neutral treatment of the eighth edition (1852-1860) is informed more by social science; the ninth edition (1875-1899) shifts the focus from ethics to statistics, and Shneidman's own contribution to the fourteenth edition in 1973 eschews statistics absolutely in favor of recognizing suicide "as a response to individual human suffering, a tragedy that befalls real people" (Shneidman 1998). Just as Shneidman's audit found new value in the "old" knowledge contained by the first, second, eighth, and ninth editions, so too might future readers find similar value in the outdated digital installments held by the Library of Congress.

The permanence of this value is and will paradoxically remain contingent on as-of-yet unmade determinations regarding encyclopedic utility, but the benefits of digital re-mediation are such that this kind of systematic reading has already become simpler to perform and may become even more effective, and therefore more useful, as the number of artifacts available for scholarly inquiry increases. "There is no better mirror of the evolution of knowledge in the western world from the western perspective than looking at the *Britannica*," Pappas explains. "Simply because we're no longer publishing the print set doesn't mean we're not cognizant of that." The expanding digital mirror may help to illuminate trends within that evolution otherwise difficult to detect. Schneidman anticipates such potential in the conclusion of his essay:

> There might be something to learn from similar *Britannica* surveys of other socially sensitive tag words. One might look, from 1768 (or whenever the word first appears) to the present date, at Addiction, Adultery, Childhood, Homosexuality, Insanity, and so forth. Scholars in different fields could suggest candidates for the word list. Put together, these would yield a lexicographic history of the past two centuries that might give some fresh insights into the evolution of our cultural trends (Shneidman 1998).

Schneidman conducted his systematic reading of the *Britannica* entirely, or almost entirely, in print, and so could not extend his own "tag word" search much beyond the articles specifically dedicated to suicide; additional relevant information may have appeared in places he (or the indexers) did think to look for it or

could not spare the time to seek. Digitization and the search technologies that come with it, though, have the capacity to spare the reader an impractical if not impossible effort by instantly locating every occurrence of a desired word in each of the hundreds of encyclopedic volumes or installments produced and archived over time.

The encyclopedia itself long has been a method of information management, and even in the eighteenth century numerous authors and editors insisted that only their new methods could make the large amounts of information comprehended by even a single universal dictionary truly useful. Enlightenment encyclopedists worked on much smaller scales and via much different methods than do those of the 21st century, but like the latter they too were motivated in part by the human limitations of short lives and shorter memories. The early editions of the *Britannica* claimed to have broken with the organizational conventions enshrined by Chambers's *Cyclopædia* and the French *Encyclopédie* for precisely such reasons. These encyclopedias organized all the terms of knowledge under their own alphabetized entries; readers would locate a desired subject or term and then rely upon extensive systems of cross-references to delineate the relevant pathways across the entire work (Sullivan 1990: 315-59). The method defined the essential form and function of the universal dictionary for close to half a century.

According to the proprietors of the *Britannica*, though, such dictionaries left every art and science "scattered under a variety of words; by which means, besides the labour of hunting for science through such a labyrinth, it is absolutely impossible for the reader, after all, to obtain a distinct view of any subject" (Proposals for Printing 1768: n.p.). The preface to the second edition insisted that any compendium that left knowledge so "dilacerated, dissected, and disseminated, without regard to connection, or systematic combination" was more aptly described as "a collection of Miscellanies than a Dictionary of Arts and Sciences," and the third edition called using letters of the alphabet as organizational categories an "antiphilosophical" method that rendered a text like the *Cyclopædia* merely "a book of threads and patches" (*Encyclopædia Britannica* 1778: 1.iv; 1797, 1.viii). The cross-references, in other words, did not work – or at least, they did not work in accordance with what the proprietors of the *Britannica* understood as the right relationship between reading and human knowledge acquisition.

The first *Britannica* therefore made categories out of the arts and sciences themselves. William Smellie wrote extended "Systems" and "Treatises" of individual subjects and supplemented them with full explanations of the "detached" parts of knowledge. He designed these more comprehensive treatments to counteract the "lack of intrinsic logic" in alphabetical arrangement by gathering beneath single headings all those terms that would otherwise be scattered across the entire work (Kafker 1994: 151). His treatise on astronomy, for instance, spans some 66 pages while its two-page counterpart in the *Cyclopædia* refers readers to nearly forty other short entries across both of its two volumes. Smellie's systems

and treatises represent the defining featural change of the modern encyclopedia in the late eighteenth century and prioritize a more intensive encyclopedic reading than previous organizational methods apparently allowed. The editors of the second edition explain:

> The systematic reader will be fully and regularly informed, by referring to the general name of the Science he wishes to explore; whilst the proficient who wishes to refresh and strengthen his memory in any particular part, may find the same by turning to the Alphabet, which, having general references, serves as an index to the Systems and Treatises, whilst others, who are willing to content themselves with partial and detached views of subjects, will find them explained under articles, by which they are denominated (*Encyclopædia Britannica* 1778: 1.iv).

This passage divides encyclopedic reading and readers into three kinds, the last of which are described in somewhat dismissive terms while the first are labeled with a term of some contemporary novelty. According to *Eighteenth Century Collections Online* (ECCO), the "systematic writer" had been part of eighteenth-century literary discourse at least since 1753; the above selection from the second *Britannica*, however, is the first in which the database records the appearance of a "systematic reader" – in this case, one who reads a given system as written and in its entirety. While such readers certainly already existed, the phrase here naturalizes the practice to the encyclopedia as a means by which one could gain the "full" understanding of a subject that following cross-references failed to facilitate.

Though in the early eighteenth century "index-learning" inspired the ire of authors like Alexander Pope and Jonathan Swift, to whom it connoted "knowledge tenuously held, only superficially grasped…not only intellectually suspect but also potentially dangerous" (Swift lambasted it in *A Tale of a Tub* as a method by which one could avoid "the Fatigue of *Reading* or of *Thinking*"), systematic writing and reading of the kind embraced by the *Britannica* as an alternative also did not go without objection (Swift 1973: 337-38; Valenza 2009: 219). The anonymous author of *A Compendium of Physic, and Surgery*, for instance, warned that, "dry systematic writers, are often as disgustful, as they are voluminous, and deter the young student by their prolixity" (*A Compendium* 1769: vi). Oliver Goldsmith similarly disparaged them as those "whose only boast it is *to leave nothing out*" (Goldsmith 1764: 1.12). When George Selby Howard set about compiling the *New Royal Cyclopædia, and Encyclopædia* (not to be confused with Hall's *New Royal Encyclopædia*), he apparently took such lessons to heart. Selby acknowledged in his preface that "too many references should be carefully avoided, in order to save unnecessary trouble" but simultaneously insisted that an encyclopedia should just "as carefully avoid being absurdly systematic, which would hinder the reader from obtaining an immediate explanation, when wanted, of any particular term or subject in a complete system, and oblige him to read the whole system through" (Howard 1788: 1.iv). The usefulness of the extended treatise or system, then, also had its limits; the successful encyclopedist had to find a middle way

between the Scylla of superficial learning and the Charybdis of uninterrupted (or uninterruptable) explication.

Systems and systematic reading remained a major part the *Britannica* for centuries. The encyclopedia, or rather one of the pirates who printed "American" editions in violation of the rights given to the publishing firms of Charles Scribner's Sons, Samuel L. Hall, and Little, Brown and Company by the Edinburgh publishing company A & C Black, continued to specifically encourage systematic reading at the turn of the twentieth century. That encouragement, though, came with an acknowledgement that readers now generally conceived of encyclopedic utility in terms of occasional reference. Along with their illicit version of the landmark ninth edition (the "Scholarly Edition"), the Werner Company of Chicago printed several editions of James Baldwin's *A Guide to Systematic Readings in the Encyclopædia Britannica*. In the introduction to the work, Baldwin presents as a recent realization what had once been widely understood: "[the encyclopedia] has usually been regarded as a repository of general information, to be kept ready at hand for consultation as occasion should demand. But while this is the ordinary use of the *Britannica*, it has been found that it possesses a broader function, and that it may be utilized in such manner as to perform the office of a great educational agent." Baldwin then attempts to redraw the line dividing dictionaries from encyclopedias. Occasional reference, Baldwin writes, "is the proper and only way in which to use a dictionary. But the *Encyclopædia Britannica* is a great deal more than a dictionary, and is capable of imparting more knowledge and more enjoyment than all the dictionaries in the world" (Baldwin 1899: iii, ix-x). The guide thus seeks to re-establish a practice excluded by a narrowed perception of encyclopedic functionality and argues to define the genre by use rather than content or pre-set organization.

The text that follows re-organizes the *Britannica* to produce systematic courses of readings intended for "the young people," "the student," and "The Busy World." The first two largely follow familiar disciplinary divisions; Baldwin sets the young people general courses in history, biography, science, and sport whereas the student can choose from a wider and more specific set of subjects ranging from astronomy to zoology and biology to mathematics. He even offers a course designed for the "desultory reader" whose curiosity he presumes can be awakened by articles about eccentric inventions, strange natural specimens, or exciting historical events. As suggested by the inclusion of entries describing funeral rites, embalming practices, mummies, tombs, and suttee (a Hindu custom in which a widow burned herself upon the pyre of her late husband), even a morbid curiosity would suffice. Courses for adults in the "busy world" are organized by trade or profession; Baldwin charts a different path for the architect, for instance, than he does for the soldier, miner, or machinist. None of these courses, however, proceeds in an order determined by the encyclopedia itself. The student of philosophy begins with the introductory paragraphs on ethics in volume eight and then must

read selections from another 68 articles distributed across sixteen volumes and the supplement. The preliminary reading recommended to the inventor, meanwhile, includes the chronological table of great inventions and discoveries in volume five, a five-page history of patents in volume 28, and the list of patent laws in force across Europe and the Unites States included in the supplement.

Baldwin's systematic readings, then, are not those authored or authorized by the encyclopedia per se; insofar as they are organized by an outside figure rather than the expert contributors and professional editors of the *Britannica*, they have more in common with Schneidman's diachronic reading of all the articles on suicide. Though both led their readers through reams of printed pages, the users of twenty-first century online encyclopedia users might nevertheless recognize them as something akin to their own journeys down what are colloquially referred to as "wiki-holes" or "wiki-trails." Loosely defined as the spontaneous and self-perpetuating process of reading an extended series of encyclopedia articles by clicking on embedded links in an order determined more by curiosity than purpose, falling down a wiki-hole or following a wiki-trail lacks the proscription of Baldwin's guide or the determinacy of Schneidman's thanatology. The hours-long sessions, however, do involve a species of intensive investigation and the agential creation of systematic readings no more necessarily disjointed than any of those not deliberately crafted by authors as coherent and self-contained single articles. Such readings do not always achieve an ideal or even discernible systematicity, but as they unfold they do have the potential to generate emergent (if highly idiosyncratic) categories or organizations bound by the cognition of the individual. Links reify relation, and while following them might seem like a reversion to searching for knowledge scattered under a variety of words – by which means, as noted above, the proprietors of the first *Britannica* believed a distinct view of any subject was lost – they allow readers to discover new views and subjects in conjunction with rather than only by order of the actual encyclopedia.

Though removed in many respects from Smellie's original systems and treatises as well as from each other, the plans and practices examined above all find ways of using the encyclopedia not necessarily anticipated by its editors and authors. The "systematic reader" of the nineteenth, twentieth, or twenty-first century is not the same as that identified by the second *Britannica* in 1778, but systematic readings of the encyclopedia have persisted. Technological change has altered the techniques, outcomes, and perhaps even the point of systematic reading, but it remains a legible if less recognizable part of the encyclopedic tradition.

Conclusion

The Enlightenment, then, has left what seems to be an indelible mark on even the digital encyclopedia. Indeed, much of the critical language now circulating around and about digital or online texts in general contains clear echoes of Enlightenment

discourse about print encyclopedias and encyclopedic learning. Bertrand Gervais, for example, describes the beginning of Stuart Moulthrop's *Hegirascope*, a hypertext fiction "of about 175 pages traversed by more than 700 links," as including the following warning to the reader: "you are now entering a labyrinth where you will not only be clueless as to where you are at any given point, but your own progression will be decided by the work itself" (Moulthrop, cited in Gervais 2008: 183-84). Readers of the work, Gervais writes, are "pressed into the position of Theseus…we hope to acquire enough knowledge to get a clear view of the work itself through our exploration of its maze, thereby possibly arriving at Daedulus's perspective." Leaving readers lost in a labyrinth and at the mercy of cross-references is precisely what the editors of the early *Britannica* wished to avoid, and a clear (or rather "distinct") view of knowledge is exactly what they hoped their systems and treatises would provide. In the same collection, meanwhile, Christian Vandendrope makes a direct connection between the reading revolution of the eighteenth century, which elevated "extensive reading" and "foster[ed] the production of big encyclopedias" like the *Cyclopædia* and *Encyclopédie*, to the fragmentary and action-oriented browsing of the typical internet user (Vandendorpe 2008: 204).[9]

The other part of the story, however – the emphasis and reinstallation by the *Britannica* of a limited kind of intensive or "systematic" reading within the encyclopedic tradition – is perhaps too easily obscured by the shadow cast back on the eighteenth century by the digital age. Roger Chartier has characterized surfing the web as "segmented, fragmented, discontinuous" and suggests that the "fragmented structure" of encyclopedic texts corresponds to that type of reading. It did and did not, does and does not. In the larger context of its whole life since the late seventeenth century, the modern encyclopedia only briefly aspired to be among those genres "the appreciation of which implies familiarity with the work in its entirety and a perception of the text as an original and coherent creation" (Chartier 2004: 151-52). Even though the first *Britannica* formally abandoned the idea that all knowledge could be represented and comprehended as a cohesive totality, though, it maintained that individual arts and sciences deserved extensive, self-contained explanation and focused consideration. Several of Smellie's treatises took up hundreds of columns; Baldwin extolled the comprehensiveness of the 84-page general article on horticulture in volume 12 of the ninth edition; and though the overwhelming majority of articles in the Micropædia of the fifteenth edition contained fewer than 750 words, the longest of the *Macropædia* went on for 310 pages.

Digital remediation has, for all that, definitely brought with it a kind of generic devolution. "There is a greater tendency now," according to Pappas, "to want to break up larger articles…because there is a need for the succinct dictionary-type synopses of things." Pappas even conceives of the *Britannica* in terms of encyclopedic coverage and knowledge production in terms more appropriate to the uni-

versal dictionaries of old. "It's cross-references," he explains. A given article might only contain a paragraph, "but you are linking off to 20 000 types of X, 20 000 words on the history of Y." These words suggest, however, that within the re-fragmented encyclopedia, the potential for sustained reading and in-depth learning still exists. Rather than reading systems or treatises pre-written by single experts, readers in search of a fuller understanding will follow the links and fashion their own. Others, as always, will content themselves with partial views. "When you think about it," Pappas suggests, "it's kind of back to the future."

I do not wish to suggest, therefore, that the digital encyclopedia has not brought significant changes to the encyclopedic project and the forms of knowledge it might generate; it has and will almost certainly continue to so. In 1998, with the first CD-ROM edition of the *Britannica* only four years old and the introduction of Google Print still six years away, even Schneidman likely did not anticipate the algorithmic analysis of hundreds or hundreds of thousands of digit-ized texts or databases that might have made his work both faster and far more comprehensive. The "distant reading" of encyclopedias – whether within editions, across them, or in the context of numberless other documents – would on the one hand be a novel approach, but it would on the other be only a logical extension of the method with which Schneidman experimented.[10] It would also be only another in a long series of different kinds of reading designed to maximize the usefulness of the work by making manageable what would otherwise be an overwhelming amount of information. Wherever such an intention "does not plainly appear," as Smellie put it in the second sentence of the first *Britannica*, "neither the books nor their authors have the smallest claim to the approbation of mankind" (Smellie 1768: v).

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Notes

[1] See, for example, Henry Peachham's *The Compleat Gentleman* (1622) and Johann Heinrich Alsted's *Encyclopædia septem tomis distincta* (1630). Though the former over the course of 40 years expanded from some 200 to roughly 450 pages in octavo, it was still of very modest size compared to Alsted's single edition of 2400 pages in folio.

2   The list in the second edition of 1791 gives the prices of the *Cyclopædia* and (presumably) the second edition *Britannica* at £13 and £19, respectively. The first edition (1788) lists this price advantage in the second position, but the promise of a bargain still leads: the proprietors promise at least one copperplate free with every number (Hall 1788: n.p.).

3   On 21 May 2013, Tom Panelas, Director of Communications at Encyclopedia Britannica, Inc., responded to my email inquiry regarding the possibility of speaking to a data editor about statistical information (average article length, optimal page load times, web traffic, etc.). I provided a description of my interests and a link to *Culture Unbound*, at which point Mr. Panelas forwarded my request to Mr. Pappas. We met at Britannica global headquarters at approximately 9:15AM CST on 13 June 2013. He provided a brief tour of the lobby and second floor, where a display houses several original *Britannica* plates. At his suggestion, the informal interview took place over coffee at the Merchandise Mart, an art-deco architectural landmark roughly one block away from Britannica HQ. The interview lasted from approximately 9:30-10:15AM CST and was recorded, with permission, on a SONY ICD-BX132 digital voice recorder (without external microphone). Unless otherwise noted, all quotations from Pappas are from my subsequent transcription of that recording.

4   "Same-sex marriage" was updated to reflect the finding of the Supreme Court within four hours of the ruling on June 26th; "marriage law" was not updated until the late afternoon or evening of the following day (the page histories of *Britannica* articles do not reflect the exact times at which changes were made). *SCOTUSblog* and the *Wall Street Journal* posted the ruling to their liveblogs of the proceedings at 9:02AM CDT; the Wikipedia entry on DOMA was updated at 9:05AM CDT (Live Blog: 2013). The approximate times of *Britannica*'s updates were garnered from my own observations of both pages as the events unfolded.

5   During the last weeks of August, for example, the news media dedicated extensive coverage to the events then unfolding in Syria; at 12:55PM CST on August 30th, the first two of three articles listed beneath each source referred to such events. The subsection on "foreign engagement and domestic chance since 1990" in the *Britannica*'s entry on Syrian history had already been revised on August 29th to reflect reports of suspected chemical weapons attacks outside of Damascus and the denouncement of said weapons by officials of the British, French, and United States governments.

6   The no-longer operational *Deletionpedia* archives over 62,000 pages deleted from the English-language Wikipedia between February and September 2008; *Speedy Deletion Wiki* contains over 181,000 pages that have been or "are in danger" of being deleted, including those it has imported from Deletionpedia (*Speedy Deletion Wiki* 2014).

7   Blue Ribbon Task Force on Sustainable Digital Preservation and Access was convened in 2007 and produced several reports, the last in early 2010. The task force received funding from the National Science Foundation and the Mellon Foundation, in partnership with the Library of Congress, the Joint Information Systems Committee of the United Kingdom, the Council on Library and Information Resources, and the National Archives and Records Administration.

8   Shneidman himself contributed seven pages on "Suicide" to volume 21 of the fourteenth edition *Britannica* produced in 1973; by that time he had co-founded the Los Angeles Suicide Prevention Center, founded the American Association of Suicidology and its peer-reviewed academic journal, *Suicide and Life Threatening Behavior,* and become the first Professor of Thanatology at UCLA.

9   For the reading revolution, see esp. Rolf Engelsing, *Der Burger als Leser. Lesergeschichte in Deutschland 1500-1800* (1974).

10   The phrase "distant reading" first appeared in an essay by Franco Moretti (Moretti 2000: 54-68). The essay also appears in Moretti's recently published collection, *Distant Reading* (2013): London: Verso.

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Knowledge for Sale:
Norwegian Encyclopaedias in the Marketplace

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Abstract

Encyclopedias present and contain knowledge, but historically they have also been commercial commodities, produced for sale. In this article, we study the self-presentations of a selection of Norwegian encyclopedias, as these are expressed in the form of commercial images, advertising texts and slogans. We thus present a brief but detailed study of what might be called a number of paratextual matters associated with 20th-century Norwegian encyclopedias, with the aim of identifying the most significant or recurring topoi in the material. Our analysis shows that claims about speed and modernization are among the most conspicuous ingredients in these self-presentations, claims which, we argue, feed into a particular logic of a particular version of 20th-century modernity. The article begins with an analysis of the commercially successful *Konversationslexicon*, the first Norwegian encyclopedia, published in 1906 and for a long time market leader of the bourgeois tradition. The *Konversationslexicon* was produced with the explicit aim of providing a source of conversation for the educated classes, a new and expanding group of readers. We also show how the publisher Aschehoug went on to strengthen its own position in this market through a sophisticated process of differentiation. Seen as a contrast to these market leaders, we explore the Norwegian tradition of counter-encyclopaedias, with the radical *PaxLeksikon* as our main example. This encyclopaedia came into existence as a result of a strong ideological motivation and was run by left-wing idealists. Nevertheless, and perhaps inevitably, it ended up situating itself within the same market mechanisms and the same commercial logic as the bourgeois encyclopaedias. The article ends by a brief consideration of the change from commercial print encyclopaedias to internet-based encyclopaedias, and of the new challenges this poses in a small nation, rhetorically and in the struggle for funding.

Keywords: Encyclopaedia, encyclopaedism, Norway, history, market

Introduction

Encyclopaedias acquired a unique place and exceptional status in Norwegian publishing during the 20th century. Egil and Harald Tveterås, historians of Norwegian booksellers, concluded about their country's publishing industry in the 1970s that encyclopaedias simply became "the kind of books which it was easiest to sell" (Tveterås 1996: 398). For quite some time, the publishers' perspective seems to have been that the market was "insatiable".[1] Our aim in this article is to present a brief but detailed study of what might be called a number of paratextual matters associated with 20th-century Norwegian encyclopaedias. By "paratextual" we refer to Gérard Genette's notion of texts at the threshold of the main text which form "a privileged place of a pragmatics and a strategy, of an influence on the public" (Genette 1997: 2). Here we are primarily interested in a sub-category of the paratext which Genette terms "the publisher's epitext", in reference to materials, such as advertisements, posters, promotional dossiers and periodical bulletins for booksellers (ibid.: 347). More generally, our approach is informed by recent work and theory related to the history of the book, in which Genette's structuralist perspective is supplemented with more historicist and sociological emphases. This kind of approach to texts requires attention not only to the particular physical forms in which a text meets its reader – the manifold functions of its materiality – but also to its various institutional dimensions. Encyclopaedias clearly participate in what Jerome J. McGann calls "The Textual Condition", and one of the dimensions of this "condition" – and of the "socialization" of texts more generally – is their inevitable situatedness as printed matter in a marketplace (McGann 1991: 3-16 and 124-25).[2] The "physically determinate and socially determined form" in which reading takes place most often has commercial dimensions. As a result, our claim is that we cannot understand the "textuality" of encyclopaedias without paying attention to how they have circulated in the world, including their "modes of production".

The particular paratexts in our corpus are primarily found in the form of commercial images, along with advertising texts and slogans. In studying this material, we have, in addition to consulting publishers' archives, had access to the Norwegian National Library's "Småtrykksamlingen", a collection of smaller print material, including leaflets and all kinds of commercial material intended for booksellers and readers, as well as "Plakatsamlingen", which is an extensive collection of posters.[3] Our goal has thus been to investigate and analyze a kind of empirical material that we believe has not yet been adequately explored, either in a Norwegian context or in general. This contribution should be considered a first step, however; it is clear to us that much more work can be done in this area.

In the following, we will study the self-presentation of a few different encyclopaedias, with the aim of identifying their logics and the most significant new or recurring topoi in the material. Our analysis will show that claims about tempo

and modernization are key ingredients in these self-presentations that reveal a particular logic of modernity. This article does not present a complete chronological survey of encyclopaedias in Norway in the 20th century. Instead, we have chosen to analyze the commercially successful "konversasjonsleksikon", which was the Norwegian market leader of the tradition established by the German publisher Friedrich Arnold Brockhaus. The German genre of the *Konversationslexicon* was produced with the explicit aim of providing a source of conversation for the educated ("gebildete") classes, a new and expanding group of bourgeois readers (Conrad 2006: 23-66; see also Meyer 1966). We will also show how Aschehoug, the publisher of this leading Norwegian encyclopaedia, went on to strengthen its own position through a process of differentiation.

Seen as a contrast to these market leaders, we will explore the Norwegian tradition of counter-encyclopaedias, with the radical *PaxLeksikon* as our main example. This encyclopaedia came into existence as a result of a strong ideological motivation and was run by idealists. Nevertheless, and perhaps inevitably, it ended up situating itself within the same market for encyclopedic products, within the same commercial logic, as the bourgeois encyclopaedias. Along the way, the publisher Pax managed to produce an impressive repertoire of inventive sales strategies, slogans and commercial material. Towards the end of this article we will touch on developments in the last part of the twentieth century, when the market could no longer uphold the production of encyclopaedias in Norway.
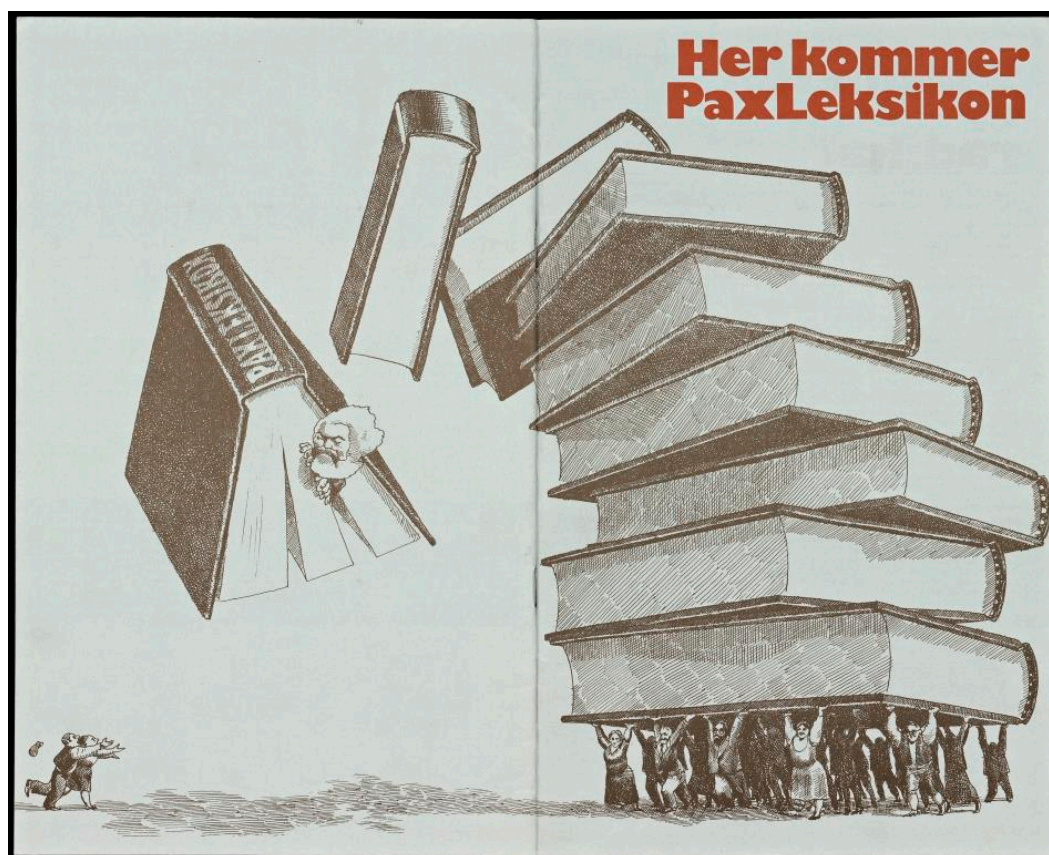
In a more general survey of the large marketing material available to us, we could have chosen to dwell on a number of other recurring rhetorical topoi, such as utility, comprehensiveness or pleasure, to mention but a few. Our reason for focusing on the many claims to novelty, modernity and up-to-datedness is that there seems to be a particular double dynamic at hand in this area. Such claims about encyclopaedias, whether they relate to content or organization, are of course not new. They are at least as old as some of the most the famous 18th-century examples of the genre. But this well-established and seemingly necessary claim, a modern and dynamic idea of knowledge, seems, in our material, also to respond to, be involved in and fed by another and more aggressive logic, namely that of the marketplace. Again, we would not want to claim that this dynamic is entirely new, but the 20th-century market, with its increased pace and its strong demands for creating new commodities and customers, seems to have helped this development accelerate. In this way, two demands for newness seem to have fed off and strengthened each other in ways that make the 20th-century encyclopaedia a particularly strong example of the forward thrust in some of the great narratives of modernity. The promotion and branding campaigns for this commodity helped create and affirm the notion of a new kind of age in which knowledge must be continually updated and consumption must increase steadily.

A Counter-encyclopaedia Introduced

It was in the context of this exceptionally strong encyclopedic tradition, one that was dominated by the bourgeois *Konversationslexicon*, that a new encyclopaedia emerged in 1978. In the marketing material for this enterprise, planned as an encyclopaedia in six volumes, a clear diagnosis of the current situation was offered: "Norway does not have too few, but too many encyclopaedias" ("Her kommer Pax Leksikon" 1978). One of the members of the editorial board, the historian Hans Fredrik Dahl, went on to note that there was no other country than his own relatively young nation in which so many encyclopedic works were sold per inhabitant, before posing a challenge: "Is this a gain for our cultural environment?" ("Et opprør i seks bind" 1978). Those behind the new and radical *PaxLeksikon* thought not. While existing encyclopaedias might be useful for those occupied with crossword puzzles, and perhaps for essay writing and self-education through correspondence schools, "An encyclopaedia, a 'Konversationslexicon', is a parcel of knowledge aimed at quick consumption and minimal understanding" (ibid.). From such a perspective there was little to separate "our two national encyclopaedias", Dahl claimed, referring to the multi-volume works by market leaders Aschehoug and Gyldendal. The content was generally the same, even if the number of volumes might vary. *PaxLeksikon*, in opposition to these market leaders, wanted to be "a rebellion in six volumes", a "counter-encyclopaedia against our great Norwegian heritage" ("Her kommer PaxLeksikon" 1978). The ambition was, as illustration 1 clearly shows, to utilize the potential of the genre in new ways:

> We want to present knowledge with understanding. We will use an elementary encyclopedic form in order to say something different, to offer complete knowledge of society, a way into politics, culture, social problems, power structures, a new scheme through and through (ibid.).

PaxLeksikon was different, but also similar; it represented a negation, but also an affirmation of a tradition in a number of ways. This was so in its claims to newness and modernity, but not least in the ways in which it utilized these claims in the launching of a new product.

Ill. 1: This "pyramid of knowledge" is carried by those for whom it is meant: workers in all countries, the so-called "grass-roots" men and women. The road to liberation and a new society went through active acquisition of critical knowledge: through the purchase of PaxLeksikon. The poster is clearly alluding to the satirical image of the "Pyramid of Capitalism", a well-known image for the political left in the 1960s.

Unknown artist, *Here comes PaxLeksikon*, Pax Forlag: 1978. Brochure A5 format, 14,85x21 cm.

The Main Tradition

Before returning to *PaxLeksikon*, we would like to sketch the history of the strongest line of Norwegian encyclopaedias in the twentieth century, again primarily relying on their commercial self-presentation. The first big Norwegian *Konversationslexicon* came into being as a result of a Danish initiative, namely the publisher Eiler Hagerup. Aschehoug's William Nygaard agreed to adopt some of the same texts, along with the same pictures and maps, but insisted that the Norwegian edition be introduced as a separate and independent work (Rudeng 1997: 176). Since the 1890s Aschehoug had operated with the motto, "Norwegian books with a Norwegian publisher", a motto which situated his publications within a national discourse against rival Danish firms publishing Norwegian authors

(Rudeng 1997: 189). The new encyclopaedia, called *Illustreret Norsk Konversations-leksikon* and published in 1906, only a year after the dissolution of the union with Sweden, has been hailed as a "marking of Norway's new independence" (Tveterås 1996: 194). By 1913 this work numbered six volumes. Nygaard had been very conscious of the importance of marketing the work, and Aschehoug distributed as many as 250 000 invitations for subscription, plus a great number of posters to booksellers and others (ill. 2). This first Norwegian *Konversationslexicon* became a considerable success, selling 20 800 sets (Tveterås 1996: 195).

Ill. 2: Subscriptions wanted for Illustreret Norsk Konversations-Leksikon! The poster presents images that became iconic in the Norwegian encyclopaedia tradition: the naked man of Aschehoug, gazing at the stars and "a world of knowledge" – surrounded by columns, like the ancient columns of Hercules, representing the boarders between the known and the unknown world.

Brynjulf Larsson (1881-1920), no title, Aschehoug: 1906. Photo-engraving and letterpress printing, 65 x 50 cm.

With the second edition of 1919 the work's title had changed to *Aschehougs Konversationsleksikon*. It was published in nine volumes and sold more than 50 000 sets. When the fifth edition was issued in 1971, it had been expanded to 20 volumes, with a print run of 140 000 (Tveterås 1996: 196). While the appeal to the national sentiments in a newly independent nation may have been dominant around the time of the first launch of this encyclopaedia, the publisher also, in calling the work "a modern Konversationslexicon", relied on a language that stressed the need to keep up with the times ("En prisregulering" 1931). The marketing of new editions went on to rely much more heavily on this topos, however. In the supplementary volume launched in 1932, itself a symptom of the concern with updatedness and topicality, the advertising held that "One must of course with works like these always make sure that the information at any given moment is always in step with the times". In addition, in a message to booksellers, the publishers noted that this volume would bring the encyclopaedia "up to date" ("En prisregulering" 1931). Accompanied by a photograph of Adolf Hitler, one of the new biographical entries in the supplementary volume, the text claimed that Aschehougs *Konversations-Leksikon* would now be "*the most modern, most extensive and detailed, most complete and up-to-date encyclopedic work* ever published in Norway"("Under pressen" 3.3.1931). The argument that the passing of time itself demanded new encyclopaedias or new editions of encyclopaedias is among the most frequently used claims in these marketing operations. In an advertising campaign for *Aschehougs Konversationsleksikon* in 1939, potential customers were told that

> [p]eople of our time seem to have an increasing need for reference books of all kinds. This strong tendency must be explained from man's new sense that the whole world affects him personally. Distances are disappearing, and through film, the press and radio the common man is presented with a chaotic material of images, concepts and words ("Aschehoug 15-bind" 1939).

This notion that the particular form or quality of the age itself demanded such new knowledge products was further strengthened in the same encyclopaedia's 1955 campaign:

> Time demands much of modern man, and his existence is becoming more and more complicated. Who? When? Where? Why? In this way questions arise many times a day through newspapers, broadcasting and literature. We now have the past, the present and the future thrust upon us in quite a different way from earlier generations. That is why keeping informed about the world has become a necessity of life for modern man, and the Konversationslexicon is no longer a luxury for the few ("Aschehoug konversasjonsleksikon 18 store bind" 1955).

Along with such extended appeals to the necessity of keeping up with the times as a requirement for existence in the modern world, Aschehoug coined slogan after slogan in order to convince its potential customers:

> "The one who buys Aschehougs konversationsleksikon is safe!"

> "The answer to all questions."

"Everything about everyone for every Norwegian home."

"Everything about everyone – for everyone – always at hand. New, useful and absolutely necessary!"

"First! Biggest! Leading!"(Aschehoug Konversasjonsleksikon, different pamphlets).

For the 1932 supplementary volume, the publishers informed booksellers that they had coined as many as 29 new slogans, one for every letter of the (Norwegian) alphabet. Such slogans were produced *en masse* throughout the century as part of ever larger and more sophisticated marketing campaigns. These one-liners made the case that the encyclopaedia in question was the most reliable, useful, extensive, simple, different, enlightening, illustrated and modern in the country.

Aschehoug's main rival in the market, *Gyldendal Konversasjonsleksikon*, was first published in 12 volumes between 1933 and 1934. A main point in the early advertising campaigns was that this was a cheaper encyclopaedia than Aschehougs, and a more user friendly one. It was only in 1960 that Gyldendal really stepped up the competition against its main rival, however. When director Harald Grieg later described the project, *Gyldendals Store Konversasjonsleksikon* – the "great" or "big" had now been added in spite of the fact that the work was reduced to four volumes – he described the cost of seven million Norwegian kroner as "a colossal one-time investment" (Grieg 1971: 812; Tveterås 1996: 397). The marketing organization had been extended and professionalized, and around 40 sales representatives had been trained for the task of travelling the country in order to secure pre-publication orders (ill. 3). Two years later, the number of sales representatives had grown to 50. One of the selling points emphasized in Gyldendal's multi-faceted marketing operations was the one of simultaneity.

Contrary to their main competitor Aschehoug, *Gyldendals Store Konversasjonsleksikon* published its four

Ill.3: "Treat him well!". The professional salesman of Aschehoug's encyclopaedia, at your service. Photographer unknown, no title, Aschehoug: 1960. Small print 26,4x15 cm.

volumes at one and the same time. The customer would not have to wait for the later volumes, and, along the way, realize that the early volumes had become out-dated. Here was, instead, instant access to a huge wealth of knowledge. The first print run ran to 32 000 sets with a total value of 24 million kroner, making up as much as 7 percent of the annual sales in the Norwegian book market. By this time, the competition for being the most modern and up-to-date reference work had intensified. When the single-volume edition of Gyldendal's encyclopaedia appeared, it was marketed under the slogan: "A new age needs a new encyclopaedia" (ill. 4).

Ill. 4: The answer to the demands of modern times: "A new age needs a new ency-clopedia!". The single-volume encyclopaedia of Gyldendal was a huge success and sold more than 50,000 copies. EM (unidentified signature), no title, Gyldendal: 1948. Litography 99x70 cm.

Differentiations for the Market

Aschehoug's *FOKUS* encyclopaedia became perhaps the strongest example of a marketing operation placing its emphasis on the topos of the modern and up to date. This product of the late 1950s focused on speed and efficiency; it aimed to meet the needs of a modern reader caught in an age of rapid change. In launching their new encyclopaedia the publishers adopted terminology from the most advanced sectors of modern technology. The six-volume work was nothing less than "A 6-stage rocket!" ("En seks-trinns-rakett!" 1958) (Ill. 5). The slogans centered around the demands for reliability, plus immediately accessible knowledge: "No one can be without an encyclopaedia today"; "A thousand and one questions occur and demand answers in the ever-changing situations of everyday life"; "All you want to know about what is happening in our time"; "*FOKUS* – the reference work for all situations!"; "*FOKUS* – An encyclopaedia in line with the demands of the age"; and, going one step further, "*FOKUS* – for the future!" *FOKUS* was, furthermore, the "modern man's modern encyclopaedia" (FOKUS, different pamphlets). The colorful promotional brochure of 1958 also claimed that *FOKUS* was "more than a new encyclopaedia – it is an encyclopaedia in an entirely new fashion, first and foremost in the way in which it communicates knowledge" ("FOKUS – kunnskap på en ny måte!" 1958). Much emphasis was placed on the efficient communication of knowledge achieved through so-called "narrative pictures", and when one reviewer dubbed the encyclopaedia "The television of the book shelf", the publisher was able to make use of yet another marker of 20th-century modernity in its promotional material (ibid.).

Ill. 5: *Totally up to date: "A six-stage rocket!"* Unknown artist, *En 6-trinns-rakett*, Aschehoug: 1958. Small print, 50x35 cm.

In her book *Forbrukeragentene* [*Agents of Consumption*], the historian Christine Myrvang argues that the conditions for what would evolve into the so-called *consumer society* in a Norwegian context were established in the transition between the 19th and 20th century (Myrvang 2009): in other words, just at the time when the first Norwegian encyclopaedia, Aschehougs, was published. Myrvang describes how a variety of agents and institutions began to actively shape the market, and how they sought to remove "purchase resistance", so that a wider population would want to purchase goods – even things you had not previously thought there was a need for, and far less an opportunity to acquire.[4] Especially during the formative phase of the Norwegian consumer society, which mainly seems to have taken place between the years of 1914 and 1960, there were "various forms of knowledge exchange, where science, technology and expertise were used in the surveys of customers, and in advertising and sales operations and other promotional work" (Myrvang 2009: 13). To measure and map the consumer, various tools and techniques were developed and perfected. Targeted and specially designed advertising helped create new needs, and new market segments were identified and established (ill. 6).

Ill. 6: A new target group is singled out: the family. In the centre of the contemplative family is the father, holding the new product: an encyclopaedia described as "the fairytale of the real".

Albert Jærn (1893-1949), *Familieboken*, Aschehoug: 1937. Offset, 99x69,5 cm.

Back to *PaxLeksikon*

As noted at the beginning, when it was launched, the 1970s radical *PaxLeksikon* presented itself as something new. Placing itself as a work in opposition to the standard *Konversationslexicon*, and in terms of content clearly giving an impression of being a counter-encyclopaedia, *PaxLeksikon* nevertheless performs particularly interesting cultural and political work, while not escaping, or even wanting to escape, the standard marketing operations we have described. While openly and obviously indebted to its radical predecessor *Arbeidernes Leksikon* [*The Workers' Encyclopaedia*], published between 1932 and 1936, *PaxLeksikon* could nevertheless plausibly claim that it was "*unusual*" and "the only one of its kind in Western Europe" ("Her er PaxLeksikon. Nyskrevet av folk som har preget samfunnsdebatten de siste 20 åra» 1978). Here was a distinct and conscious ideological profile, an encyclopaedia "in which the authors do not hide their opinions, but systematically try to enlighten things from a unified perspective" (ibid.).

For the radical intellectuals behind Pax, newness was not just about organization or content; it was about thinking anew as part of a necessary response to what they deemed to be a new phase of capitalism. But they also placed themselves in a tradition, one which bypassed the *Konversationslexicon*. In an ingenious interview with Denis Diderot in the promotional material for the first volume of *PaxLeksikon*, the great *encyclopediste* advised his young Norwegian successors to think new thoughts (Dagblabla 5.3.1979). But thinking anew, he noted, was not possible without an "overview of experience", a key synthetic principle which of course informed the new encyclopaedia (ibid.).

Pax was, to repeat, different from the *Konversationslexicon* in a number of ways. This was proven by the rejection of objectivity, by the explicitly socialist, feminist and international perspectives, and the selection of entries. But in other ways it was very much similar to the encyclopaedias against which it so strongly distanced itself, such as in the organization of knowledge and the relatively distinguished material appearance of the books, as well as, and not least, in the stress on newness. This was, furthermore, representative of the degree of its market orientation, and the active efforts these publishers and idealists made in order to create and reach new customers.

By August 1978 the small publisher had more than 25 people employed in selling the work in the largest Norwegian cities, and commercial material was supposed to reach all of the country's 1.4 million homes ("Dagsorden/framdriftsgruppa" 14.6. [1978]). Those in charge believed that *PaxLeksikon* had an "enormous sales potential", and the campaign would include "exhibitions, direct contact, phone calls, window exhibitions and DM [Direct Marketing] among other things" (ibid.). The country's booksellers were told that:

> There is a big market for *PaxLeksikon*! Surveys undertaken by Pax show that a big public are waiting for *PaxLeksikon* with expectation and interest. Those that want *PaxLeksikon* are, admittedly, special groups – but these groups are big, they are tra-

> ditional book buyers and they are spread all over the country. *It is all about reaching them*!. ("Her kommer PaxLeksikon, kampanjetidsplan" 1978)

As part of its innovative marketing, the publisher also made effective use of its own existing network. When volume three was published in October 1979, and the sales had proven themselves considerably lower than anticipated, the 4,300 people who had bought the encyclopaedia directly from the publishers were contacted and asked to do their part: "Now we must get to know your friends – and it is *you* who will have to make the contact!" ("Vervekampanje" 1979). In spite of all of these efforts, *PaxLeksikon* ended up as a commercial disappointment. In 1980, two years after the first volume had been published, the minutes from a meeting of the encyclopaedia's editorial board opened as follows: "Sales stand almost entirely still" ("AML" 1980-01-10).

PaxLeksikon was not a great commercial success, but it functioned as a marker of identity for large parts of an entire generation. If you had *PaxLeksikon* on your bookshelf, you sent a signal to others about your view of the world. As a commodity, *PaxLeksikon*, furthermore, took part in a dynamic, in which commercial material and a sales apparatus helped build an encyclopaedia as a brand. Part of this construction meant that the encyclopaedia presented itself as something new, and that owning this product meant that you moved with the times, perhaps even ahead of them.

Going Online

The 20th-century print encyclopaedia seemed to gain momentum while creating an ever stronger sense of urgency, until it finally began to slow down toward the end of the century – in terms of sales, that is – and eventually disappear. The disappointment felt by the idealists behind *PaxLeksikon* may not have been related to the technological, structural, and economic difficulties to come, but their greatest rivals in the Norwegian encyclopaedia market would soon experience even more radical setbacks. In the era of online encyclopaedias, however, some of the issues we have discussed above remained, both in terms of their connections with the dynamics of the market, and their self-presentations.

A first definite ebb in this tide may be said to have come when Aschehoug and Gyldendal, the publishers with by far the biggest market shares, in 1987 decided to pool their resources together and launch *Store Norske Leksikon (SNL)* [*The Great Norwegian Encyclopaedia*]. This must be seen as the last concerted effort on behalf of the printed encyclopaedia in the marketplace. When the publishers decided to stop publishing *SNL* on paper 20 years later, in 2007, the argument was simply that there was no longer a market for such products. It also turned out that even the online version of the encyclopaedia was a product that seemed impossible to sell: the 140 000 users simply did not attract enough advertisers at the time. On February 25, 2009, it became available for free. At one point the owners of what had recently been such a valuable commodity even tried to give it to the

Norwegian state for free, in the hope that this rich knowledge resource would be maintained through public funding; the offer was promptly rejected by the then Norwegian Minister of Culture, Anniken Huitfeldt: "There are other, more important things to support than something neither users nor advertisers have shown an interest in," she observed (Morgenbladet 12-18 March 2010). A heated debate soon ensued. One point of attack was the fact that the Minister of Culture seemed to say that economic support of non-profitable cultural initiatives should not be the task of the government. Critics responded sarcastically, as reported on NRK.no, asking what the task of the Ministry of Culture would be if not this (NRK.no 2010). Another key issue was Huitfeldt's own understanding of knowledge, in which the matter of speed seemed to be central:

> The Internet has revolutionized our chances of collecting and sharing information. While we in earlier times consulted encyclopaedias because they were our most accessible source, we now go straight to the source and our demands for updated information have increased in step with digital developments. (*Morgenbladet* 26 March-8; April 2010)

In other words, new knowledge for modern people, Huitfeldt seemed to insist, was already available – in *Wikipedia*.

The obvious counter-argument that was soon made was that *Wikipedia* was not an encyclopaedia written by a traditional academic group of editors, like the *SNL*. The Minister of Culture responded by stating that people should seek knowledge wherever they wanted to, and continued to note that the real challenge was to achieve a critical attitude to all sources of knowledge, expressing the somewhat commonsensical notion that academics in any case always disagree: "Claiming that you find truth in an encyclopaedia is problematic" (NRK.no 2010). Kjell Lars Berge, professor of rhetoric at the University of Oslo, gave a pithy summary of the minister's argument: "Huitfeldt concluded that no one has a monopoly on truth and that it is therefore problematic for the state to support an encyclopaedia project. Such a view of knowledge is not just quasi-pragmatic, it is New Age-like and absolutely scandalous" (Klassekampen 24 March 2010).

At the end of 2010, the *Fritt Ord Foundation* and the savings bank foundation *Sparebankstiftelsen DNB* finally found a way in which to help secure the continued existence of *SNL* online. The *Fritt Ord Foundation* allocated 16 million NOK for a period of three years, with an intention to achieve more long-term funding and to form a permanent organization. At record speed, *SNL* managed to establish a highly operative and well-used online encyclopaedia, relying on the traditional practice of an editing board and named – rather than anonymous – authors for the articles. But *SNL* still depended entirely on external financial support to secure its continued existence.

With a head start of six years on the first digital version of the old *SNL*, Norwegian *Wikipedia* had established its position as the first encyclopedic port of call for Norwegian internet users. As a part of the Wikimedia Foundation Organiza-

tion, *Norwegian Wikipedia* also had a technological and economic lead, from the outset benefiting from their shared publishing platform, and from the financial support of 60 million NOK from private benefactors. The Arts Council of Norway have by now even given 530 000 NOK for the development of both *SNL* and *Wikipedia*, having shown a particular interest in training writers in how to write *Wikipedia* articles (Arts Council Norway 2014).

Norwegian Wikipedia is one of oldest *Wikipedia* versions, established as the 16th to be created since 2001, when the Wikipedia project was founded. The Norwegian project was inactive for a substantial period of time, however, until it was revived in the autumn of 2003. In 2004, a separate version for the minority language New Norwegian (*nynorsk*) was created, and this was launched in 2005. Since that time, two Norwegian *Wikipedia* versions have therefore existed side by side.

As of 2012, *SNL* had more than one million users each month. The vice-chancellor of the University of Oslo, Ole Petter Ottersen, board member and active supporter of the non-commercial *SNL*, has referred to a new and strong enthusiasm for submitting articles to *SLN* among his employees (Aftenposten 20 March 2012). This interest goes hand in hand with the new editorial policy of *SNL*, where speed and the need to update have become highly important factors. Chief editor Anne Marit Godal has noted how there is now a new pressure on old-style encyclopaedias:

> It affects our legitimacy if a particular subject is dead. Our readers notice when a particular article was last updated and whether there has been an active discussion. […] You are supposed to be able to see whether a Professor emeritus has in fact been involved in the discussion. Earlier it was possible to hide behind a CV-based authority. But what gives legitimacy on the web is *action*. We will always want to get rid of editors who don't respond or who use more than three days to respond and thus demonstrate their presence. (ibid.)

At this point, however, Godal is not overly worried about the competition between *SNL* and *Wikipedia*:

> We can live very well with *Wikipedia*. We want to be the primary source for updated, academic knowledge, while they are a secondary source. We have the responsibility of a publisher, while they need sources in order to publish things (ibid.)

Godal stresses the need for *both* a Norwegian *Wikipedia* and an encyclopaedia of the *SNL* kind, where all contributors write under their full names and the quality is vouched for by Norwegian experts in their fields.

A Question of Trustworthiness

It is still necessary for encyclopaedias to attract financial support from external sources, but now that the market of paying customers has collapsed in Norway, in new ways. Interestingly, the arguments for gaining such support now seem to fol-

low the lines of a more traditional legitimization of knowledge. The issue of trustworthiness has been a pillar in the production of encyclopaedias for centuries, and has been a "unique selling point" (Sundin & Haider 2013: 2).

At the moment of our writing, the continued existence of *SNL* is being challenged more directly by *Norwegian Wikipedia.* When the new conservative government presented their budget for culture in November 2013, they included a grant of five million NOK to online encyclopaedias, a move clearly intended to secure the existence of *SNL*. But Erlend Bjørtvedt, second in command at Wikimedia Norway, soon confirmed that they also wanted to apply for this funding (Morgenbladet 15-21 November 2013). Anne Marit Godal from *SNL* noted, "There's a crisis because we're out of money by The New Year", sarcastically adding that if they don't get the support, they will have to move back to selling paper encyclopaedias and knocking on doors (Ibid.).

The lines of argument have clearly shifted, however. The guidelines for funding have not yet been finalized, but the press release from the Ministry of Culture "recognizes the need to increase the diversity of scholarly edited and high-quality online encyclopaedias" (Ibid.).[5] The bone of contention in the resulting debate is the definition of "scholarly edited" ["fagredigert"]. Godal finds that the wording excludes *Wikipedia*, as it breaks with their fundamental idea of a democratic and open editorial practice, but Bjørntvedt does not accept the argument. He even finds it "very difficult to understand" what is meant by the term (Ibid.). In *Morgenbladet*, he points to the fact that a *Google* search typically results in very few hits in Norwegian, most of which are associated with *SNL*. In what may or may not be a tone of mock-naivety, he warned that *Wikipedia* will react if applicants will be asked to fulfil criteria that do not exist in the language. While *SNL* hopes that the Ministry will demand that such "scholarly edited" encyclopaedias must operate with authors credited by name, Bjørntvedt somewhat audaciously claimed that he is in fact involved in the only properly quality-controlled encyclopedic online project in Norway: "All changes must be approved by another person besides the one writing them", he noted, whereas this is not the case with *SNL* (Ibid.).[6] In other words, the battle seems to focus on scholarly authority rather than on speed or democratization.

Conclusions

As we have shown in this article, some of the most striking aspects of the marketing strategies for the print encyclopaedia were the prominence of claims to modernity and to continually bringing the readers up-to-date on the world. In online encyclopaedias, this old encyclopedic challenge has been solved by new and more efficient means of being up-to-date. The legitimizing strategies for funding the production of this recent encyclopedic knowledge seem to re-activate and strengthen another old generic topos, namely that of trustworthiness. Rather than

framing knowledge within political terms, in the way that the counter-encyclopaedia *PaxLeksikon* did, both *Wikipedia* and *SNL* are grounded in framing themselves as fundamentally democratic, even if both editorial practices and their respective views on the role of expertise are markedly different. This leaves online encyclopaedias in a position where the main question concerns trust.

Ours is not a comprehensive study, but we have chosen to follow some of the most significant examples of the Norwegian encyclopedic genre over the course of a century all the way up until what may seem like its exit from the marketplace. It is hard to think of another product in the Norwegian book trade of the 20th century, with as much investment in marketing efforts as the encyclopaedia. As such, in the way in which some of the most ambitious products become laboratories for market innovation, the genre can also be seen as a motor in the general professionalisation and commercialisation of the publishing trade.

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Notes

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[2] For two other pioneering studies in this field, one concerned with the materiality of the book, the other with the history of reading and the distribution of texts, see D.F. McKenzie, 'The Book as an Expressive Form' and Roger Chartier, 'Labourers and Voyagers: From the Text to the Reader', in *The Book History Reader*, ed. by David Finkelstein and Alistair McCleery.

[3] These collections are particularly comprehensive in this case because such material has been included among the mandatory submissions to the national deposit library.

[4] For further reading on the emergence of a consumer society, see Matthew Hilton, Consumerism in 20th-Century Britain: The Search for a Historical Movement; Lizabeth Cohen, A Consumers' Republic: The Politics of Mass Consumption in Postwar America; Regina Lee Blaszczyk, American Consumer Society, 1865-2005; and Susan Strasser, Satisfaction Guaranteed: The Making of the American Mass Market.

[5] The Norwegian terms are 'fagredigert' and 'faglig kvalitetssikrede'.

[6] It should perhaps be noted that this is not the case. Articles in *SNL* are first vetted by an internal editor, then by the editor responsible for the subject area.

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Reviewing Encyclopaedia Authority

By Vanessa Aliniaina Rasoamampianina

Abstract

As traditional encyclopaedias appear to be loosing the favour of the general public, the current paper investigates the extent to which encyclopaedias are still presented as authoritative texts. Here, authority in texts is mostly construed from the theory of cognitive authority according to Józef Maria Bocheński, Richard De George, and Patrick Wilson; in particular from their reflections on the roles, measures and bases of cognitive authority. The content of 80 book reviews on science and technology encyclopaedias is analysed in order to highlight comments pertaining to encyclopaedia authority. Although many aspects of cognitive authorities are covertly discussed within these book reviews, encyclopaedias are not explicitly presented as absolute authorities.

Keywords: Cognitive authority; encyclopaedias; book reviews

Introduction

Reference works such as encyclopaedias have always been one of the first materials to be consulted by the general public in the search for answers to their questions. In fact, Patrick Wilson (1983: 81) states that reference materials such as encyclopaedias often have 'absolute' cognitive authority, thereby implying that answers found in encyclopaedias are considered enough to settle the question. Unsurprisingly, encyclopaedias have traditionally held a prominent place on library shelves within households, schools and universities. However, since the boom of the Internet and with the arrival of *Wikipedia* and other online encyclopaedias, people have had the possibility to access a plethora of alternative resources which are in direct competition with printed encyclopaedias (e.g. Tenopir & Ennis 2001; Bradford et al. 2005; Lewis 2010). In fact, with the never-ending debate surroun-ding *Wikipedia*(e.g. Magnus 2009; Soylu 2009; Chen 2010), the authority of other encyclopaedias has started to be scrutinised (e.g. Bell 2007; Rector 2008; Younger 2010; Kubiszewski et al. 2011) and even well-established works such as *Encyclopaedia Britannica* have been vehemently criticised (e.g. Giles 2005).

The current paper investigates the extent to which, in the 21st century, encyclopaedias are still presented as cognitive authorities, especially in book reviews where recommendations on recent publications are offered to potential buyers and users. Eighty book reviews on science and technology encyclopaedias published between the years 2000 and 2010 are considered here. When, in a previous study, these book reviews had been analysed to assess encyclopaedia quality, it was hinted that these reviews may hold an underlying discussion around the theme of encyclopaedia authority (Rasoamampianina 2012). The content analysis I am undertaking here is intended to expose that underlying discussion. The main question I am addressing is: Beyond the reviewers' critical assessment of encyclopaedia quality, what is being said on encyclopaedia authority? The theoretical framework I am drawing on is firmly grounded on the literature on cognitive authority.

From Defining Cognitive Authority to Studying Encyclopaedia Authority

Initially, the term 'cognitive authority' was introduced to information studies by Patrick Wilson – a librarian, information scientist and philosopher – in his book *Second-Hand Knowledge: An Inquiry into Cognitive Authority* (1983). Wilson acknowledged that his concept of cognitive authority is based on the concept of 'epistemic authority' as defined by Józef Maria Bocheński and Richard De George. Bocheński was a logician who studied, among many other topics, the concept of authority. Bocheński mentioned cognitive authority in several publica-

tions (Bocheński 1963, 1965a, 1965b, 1989) and discussed it more thoroughly in his book *Was istAutorität? Einführung in die Logik der Autorität* (originally published in German in 1974 and translated into French by Secretan in 1979). De George is a philosopher who is currently studying political and moral authorities but who, in the past, dedicated a couple of papers to epistemic authority (De George 1970, 1976) as well as an entire chapter on 'The Authority of Knowledge and Competence' within his book *The Nature and Limits of Authority* (1985).

Other researchers have continued reflecting on the nature of cognitive authority (e.g. Peters 1965; Adams 1976; Chambers 1979; Watt 1982; Rieh 2005). Recently, there have been a growing number of researchers who used cognitive authority as theoretical framework for their empirical studies (e.g. Rieh & Belkin 2000; Fritch & Cromwell 2001; McKenzie 2003; Moed & Garfield 2004; Savolainen 2007; Hughes et al. 2010). Many researchers have also studied specific facets of cognitive authority such as trustworthiness, credibility, or reliability; and some of them have done so by focusing on the particular case of *Wikipedia* (e.g. Chesney 2006; Lackaff & Cheong 2008; Goodwin 2009; Magnus 2009; Francke & Sundin 2010; Lucassen & Schraagen 2010; Kubiszewskiet al. 2011). Because researchers commonly adhere to the general tenets of cognitive authority as outlined by Bocheński, De George and/or Wilson, the current paper mostly – but not exclusively – discusses cognitive authority according to these three philosophers. For the sake of consistency, the term 'cognitive authority' is used throughout this paper.

In non-specialist terms, a cognitive authority is an individual or an institution considered as 'an authority' on a particular subject, as opposed to an individual or an institution 'in authority' within a particular community (Peters et al. 1958; Young 1974; Green 1998). In the literature, cognitive authority is not only seen as the authority of people who 'have more knowledge than normal /…/ more knowledge than other people' (De George 1985: 27), people with 'superior knowledge' (De George 1976: 80) but it is also seen as the authority 'of one who knows better, i.e. of the expert in the field' (Bocheński 1965b: 167). Moreover, a cognitive authority is a person who is being actively sought after for insights and whose influences are being consciously recognised as 'proper' (Wilson 1983: 15). In other words, a cognitive authority is a person who is accepted to exert some form of intellectual ascendance over other people.

Although reference works such as encyclopaedias are often recognised as absolute cognitive authorities, the literature on cognitive authority tends to overlook the case of texts (and institutions) and concentrates more on the case of individuals. In fact, Bocheński (1989: 62) does not even accept that texts may hold authority. For him, the bearer of authority should be a conscious being, which is not the case with texts. Of course, all texts are written by individuals and it could be argued that it is the authority of these individuals which is transferred to the texts they author; yet Bocheński does not allow such a transfer. By contrast, De George

(1970: 200) writes that the bearer of authority could also be a text or other human artefact. Taking the example of reference materials such as encyclopaedias, De George (1985: 28) explains that, in theory, it is the author who is the authority on the topic discussed in the text, but, in practice, the author is often ignored by the readers who directly put their trust in the text. Wilson agrees with De George and further argues that there are cases where 'a text may acquire cognitive authority independent of the authority of its author' (Wilson 1983: 168). For instance, 'for the very naïve people, any publication may carry authority; the mere fact of something being said in print /…/ is enough to give it weight' (Wilson 1983: 81). In fact, even among the more educated people, a text which has been used by many or which has been used for quite some time can gain a reputation – hence an authority – of its own. Similarly, a published text which has gone through many revisions and re-editions can gain a reputation and authority to the extent that it may be 'thought of as an institution in its own right' (Wilson 1983: 169). This said, De George and Wilson only sporadically examine the authority of texts in their works. Because of this oversight, many of my reflections on the cognitive authority of texts are drawn from existing discussion around the cognitive authority of individuals.

In the current paper, I am revisiting three aspects of cognitive authority and analysing how these aspects are discussed within the book reviews on encyclopaedias in order to answer the following questions:

- Which of the roles of cognitive authorities are played by encyclopaedias?
- How is encyclopaedia authority measured?
- How is encyclopaedia authority justified?

Book Reviews on Science and Technology Encyclopaedias

A systematic sampling conducted on the *Elsevier'sScienceDirect* database on 31st March 2011 provided the 80 book reviews analysed in the current paper. From the list of journal articles published between the years 2000 and 2010 within the 're-view article' category, those with the words 'encyclopaedia' or 'encyclopedia' in their title and those which pertain to science and technology topics were selected. As many as 75 out of the 80 reviews focus on printed encyclopaedias although some of these reviews also include brief comments on alternative formats. In three cases, the reviews focus on CD-ROMs and in two cases, on online encyclopaedias.

These 80 reviews concern 66 specialised encyclopaedias published by 27 publishers: a third of these titles are by Elsevier/Academic Press, a quarter by Wiley, and the remaining titles by other well-known publishers located in North America and Europe (e.g. CABI Publishing, Taylor and Francis, Chapman & Hall, Oxford University Press, or Cambridge University Press). Most of these titles are in their

first edition: there are only six titles in their second edition, two titles in their third edition and one title in its twelfth edition.

As many as 73 out of 80 reviews are signed, gathering up to 85 reviewer names altogether. Limited information is provided on who these reviewers are or how they got involved in the task of reviewing encyclopaedias. One reviewer reported that he is a journal editor who had failed to find suitable reviewers, three reviewers had been approached by the book review editors, and a handful of reviewers seem to be conducting book reviews for specific journals at regular intervals. Within my sample, reviewers are rarely involved in the writing of more than one review, as seen in 8 cases. More often than not, they are the sole author of their review, as seen in 61 cases.

The 80 reviews range from one paragraph comments to ten page essays. In general, reviewers' comments on the authority of encyclopaedias are interspersed throughout the text and – as described in the rest of this paper – very diverse in nature.

Roles of Encyclopaedias

Firstly, according to the literature, the principal role of a cognitive authority is not only to effectively communicate knowledge (Bocheński 1989: 61) but also to 'substitute the knowledge of one person in a certain field for the lack of knowledge of another' (De George 1970: 201). Secondly, a cognitive authority is expected to serve as a guide and source of advice (De George 1970: 201); thirdly, to influence the thinking of others (Wilson 1983: 14); and finally, to express informed opinions (Wilson 1983: 16-18). This last point combines the interpretation of current knowledge and the formulation of predictions beyond what is already known. In practice, it means that a cognitive authority should be able to (1) indicate the state of knowledge on a specific topic; i.e. tell whether the knowledge can be consi-dered as correct – or at least widely accepted – or not; (2) answer questions never asked before from the current state of knowledge; and (3) assist in times of uncertainties and controversies by weighting the various competing ideas, by indicating which ideas can be taken into consideration and which ideas can be ignored, and by suggesting how to deal with these competing ideas.

Within the 80 book reviews analysed in the current paper, comments on the role to be played by encyclopaedias are found in 32 cases. The majority of the reviewed encyclopaedias are reported to be playing only one or two roles at a time. Most roles suggested in the literature on cognitive authority are mentioned, even if the terminologies used by reviewers often differ. For instance, in relation to the principal role of cognitive authority, a handful of encyclopaedias are presented in a way that their chief goal seems to be the communication of existing information. Examples of such goals are: 'to present information' (Clements 2002: 106); 'to list every person, every event and every occasion that has some

bearing on [a subject]' (Williams 2001: 285); 'to provide a comprehensive collection of knowledge' (Sapidis 2005: 137); or 'to cover everything in a complex range of topics' (Kennedy & Jin 2005: 392). Some encyclopaedias are reported to be making more efforts than others by summarising the main ideas, by synthesising and organising existing knowledge logically, by ensuring both a broad and in-depth coverage, or by highlighting the links between interconnected ideas.

Regarding the role of encyclopaedias as guides and sources of advice, encyclopaedias are typically described as 'a reference' (e.g. Okamoto 2001: 212). More specifically, encyclopaedias are reported 'to provide a complete resource for research' (Kennedy & Bandaiphet 2003: 394), 'to direct the reader on to further specific topics' (Kennedy & Mistry 2003: 344) and 'to ensure that readers will be able to find accurate and up-to-date information on all major topics' (Emery 2003: 93). In several cases, encyclopaedias are presented as 'authoritative answers to perplexing questions' (Kennedy & Jin 2005: 392) or as 'an attempt of collecting a series of answers on the major issues in [a given science]/…/ so that the readers can receive rapid answers on the major questions' (Vercelli 2007: 60) and can 'more easily find answers to questions from their own desks' (Kennard et al. 2005: 201).

Some of the roles of cognitive authority are less commonly observed in encyclopaedias. For example, although most encyclopaedias are reported to aim for up-to-date information, the state of the knowledge presented within these encyclopaedias is rarely made explicit. Few reviewers talk about encyclopaedia entries with information which is presented as questionable or as a consensus according to the current state of knowledge within the scientific communities. One reviewer even complains that some of the entries within the *Encyclopedia of Atmospheric Sciences* should discuss existing uncertainties in the use of measuring devices and argues that

> knowing these uncertainties is critical to determining the bottom line. The answers to the aforementioned questions may be debatable, and we can no doubt have fun in discussing them. But they are necessary. /.../ Let that debate be resurrected. (Anonymous 2003: 317)

One role of cognitive authority, which is never explicitly discussed within reviews, is the intellectual influence that encyclopaedias may exert on their readers, although anecdotal evidence is sometimes provided. For instance, within the review of *The Concise Encyclopedia of Fibromyalgia and Myofascial Pain*, one can read: 'Anyone who may have been sceptical about the existence of these conditions is likely to think again!' (Rugg 2003: 622). Similarly, no one mentions the potential assistance provided by encyclopaedias in times of uncertainties and controversies as explained in the literature on cognitive authority.

Finally, there are three additional roles played by encyclopaedias which are not mentioned in the literature on cognitive authority but which are reported by the reviewers. These roles are: 'to share the excitement and to feed the curiosity of

others [on a subject]' (Lawler 2002: 135), 'to make jumping into [a new subject] highly accessible' (Griffin & Silliman 2009: 65), and 'to make [information on a subject] universally available at no cost to users' (Kennard et al. 2005: 201). Although important and legitimate, I would argue that these roles have limited relevance to the authority of encyclopaedias, except maybe by amplifying the attractiveness of the encyclopaedias for the public, thereby increasing the chance of the encyclopaedias to be chosen as the preferred reference materials.

Measures of Encyclopaedia Authority

The cognitive authority of a published text can be measured according to five parameters: the scope, the degree, the extent, the intensity and the sphere of authority. But before mentioning anything specific regarding the encyclopaedia under scrutiny, many reviewers start or end their review with qualifiers hinting at the perceived authority of the latter. Below are typical examples: 'a major publication' (de Silva 2002: 1241); 'a key reference work' (Edwards 2003: 279); or 'the most definitive text on…' (Carvel 2001: 185).

Scope of Authority

The scope of authority is defined from the range of topics and from the depth of treatment, which allows the communication of greater knowledge to the readers. When the range of topics covered is considered limitless, the scope of authority is immeasurable and one can talk about 'universal authority' (Wilson 1983: 20), though, only generic encyclopaedias – and some religious texts – may fall, if at all, within that category. In practice, the readers can relatively easily assess the scope of authority of a text by looking at the titles, tables of contents and indexes.

A close analysis of the reviews indicates that the scope of the encyclopaedia is mentioned in 57 reviews. Most reviewers simply present a quick run-through of the table of contents volume by volume, section by section, or chapter by chapter. Other reviewers provide an in-depth description of the major sections or even a detailed overview of the content of selected entries, which appear to be chosen at random or which fall within the domain of expertise of the reviewer. In a few cases, the reviewers assess the scope of the encyclopaedia by making a comparison with the content of other texts. For instance, Sparkman (2004) compares *The Encyclopedia of Mass Spectrometry* with other reputable reference works published in the last 50 years. More commonly, reviewers compare the consistency of the coverage within the encyclopaedia instead of comparing this latter with other texts. For instance, when assessing the scope of the *Encyclopedia of Soil Science*, it is reported that

> the treatment of soil biological and ecological issues is much less extensive than physico-chemical aspects of soil science. Of the more than 350 chapters, less than 30

are focused directly on biological issues, although there are biological and ecological inputs into many other chapters. (Edwards 2003: 279)

The scope of the encyclopaedia is deemed inappropriate for the targeted audience in only one case. That is when the reviewer of the *Encyclopedia of Hormones* criticises

> The publishers have indicated in their publicity that this volume is designed to be read by non-endocrinologists. /…/ It is difficult to imagine an individual with an interest in introductory information over such a broad range of endocrine topics. Instead, it seems best suited for wider usage, for example, by a biology department or library as a first source of endocrine information. (Castracane 2003: 446)

In general, it is rare that reviewers offer some value judgment on the scope of the encyclopaedia they are reviewing.

Degree of Authority, Extent of Authority, Intensity of Authority

The degree of authority is another parameter used to measure the cognitive authority of a text. It is related to the probability of being believed or accepted by the readers. De George (1985: 20) talks about this in terms of extent of authority and intensity of authority. The extent of authority can be seen as a function of the number of people who are considering the text as an authority. A practical approach to capture the extent of authority is to refer to the number of people who are recommending the text to others. By contrast, the intensity of authority – also called weight (Wilson 1983: 13) or degree of seriousness (Wilson 1983: 17) – can be seen as the level of acceptance of that text among the people for whom it is an authority. This can be captured through an analysis of citation patterns where texts, which are most cited and endorsed by many people, are considered the most authoritative in the field. When all statements are unconditionally accepted, as was traditionally the case for encyclopaedias and religious texts, one can talk about 'absolute authorities' (Wilson 1983: 18).

I discovered that book reviewers do not really provide a detailed assessment of the degree, extent, or intensity of authority of a given encyclopaedia according to the approach described above. Only the extent of authority is sometimes discussed but in very broad terms since no number is provided. The most detailed assessment I found within my sample is the report made on *Anaesthesia and Intensive Care A to Z: An Encyclopaedia of Principles and Practice*, when the reviewer recounts

> Many of our anaesthetists, ODPs, theatre nurses and paramedics have gone out and bought the book after 'borrowing' my copy in the operating theatre. That fact speaks for itself! (Greenslade 2000: 93)

In the task of assessing the extent of encyclopaedia authority, some reviewers refer to the experience of people around them, as illustrated in the quote above. One alternative adopted by other reviewers is to refer to their own experience, past or future. For instance, reflecting on the past, Greenslade (2000: 93) recalls that, in

his department, '[*Anaesthesia and Intensive Care A to Z: An Encyclopaedia of Principles and Practice*] was attracting the same sort of attention normally reserved for a new Ferrari in the car park' whereas Enser (2006: 182) confesses: 'In my student days, many years ago, I would have appreciated a work such as [the *Encyclopedia of Meat Science*].' Projecting in the future, Dorr (2001: 189) claims: 'I intend to use the MITECS [*MIT Encyclopedia of the Cognitive Sciences*] extensively over the next several years and will make parts of the volume required reading for students in my classes.' Finally, instead of referring to personal experience or to the experience of other people, a couple of reviewers opt to invite the individual reader to imagine his or her own experience with the encyclopaedia. A typical example can be seen in Fisher's (2009: 535) comment: 'You may want to keep [*Epilepsy A to Z: A Concise Encyclopedia*] near your clinic office to pull down on behalf of a patient who is befuddled by a particular medical term.' In fact, a common way to provide a measure of the extent of authority is to speculate on the possible impact the encyclopaedia may have on a larger audience. Such speculation can be based on the encyclopaedia's potential to provide unique contributions or to fill a knowledge gap within a discipline – arguments which both are used by Okamoto (2001) regarding the MITECS and its contribution to the field of artificial intelligence. The extent of authority can also be inferred from the timeliness of the publication, as argued by Kennedy and Jin (2005) regarding the release of *The Encyclopedia of Grain Science* at a time when cereals are playing paramount roles as a global food source. It should, however, be noted that, when reviewers are speculating on the extent of the authority of an encyclopaedia, many of them make vague and unfounded statements which could eventually fail to provide any useful indication for the readers.

Sphere of Authority

One last way of measuring cognitive authority is through what Wilson (1983: 19) calls 'the circumscribed spheres of authority' which combine the scope of authority and the intensity/weight of authority. According to this concept, each text covers a well defined range of expertise within which the influence exerted on the readers is at a maximum –that is within the core of the sphere of authority– and as the text ventures away from this core, its influence decreases. But precautions have to be taken when measuring the sphere of authority because the range of expertise offered within a text and the information sought by the readers do not always overlap. For instance, the readers may be looking for answers outside the stated scope and sphere of authority of a given text; or the readers may only be looking for answers on only one or two topics whereas the text may have a much wider scope. So, 'it is finally for the audience to decide on the scope or the sphere within which it would value the authority's words' (Wilson 1983: 20).

Surprisingly, although many reviewers within my sample define the scope of an encyclopaedia, few of them actually make the distinction between the topics

which are within the core of the sphere of authority and those at the periphery. Among those who do, Windley (2006), for instance, specifies that among the strong points of the *Encyclopaedia of Geology* are entries on Southeast Asia, Pan-African Orogeny, or Brazil whereas the weaker points are entries on Central Asia, China and Mongolia, and Japan. Typically, topics outside the core of the sphere of authority consist of entries with perceived gaps and shortcomings.

In order to grade the weight of different topics within the same encyclopaedia, some reviewers prefer to classify topics according to various audiences with different centres of interest and levels of expertise. This is what Kemeirait (2006) does when he subdivides the content of the *Concise Encyclopedia of Plant Pathology* into sections of great importance for professional plant pathologists, sections for college students, and sections for gardeners and other people generally interested in plants. More generally, some sections may simply be inappropriate for a certain type of readers whereas other sections may be more 'interesting' (Williams 2001: 285), 'fascinating' (Petrie 2010: 215), etc. This last point is related to the 'level of attractiveness' of a text, which I am discussing in a later section of this paper.

Justifications for Encyclopaedia Authority

Wilson provides a detailed analysis of the basis of authority in texts. He identifies five major ways whereby the public justify their choice of a given text as their cognitive authority on a specific topic.

Reference to the Authority of Authors and Editors

The public primarily rely on the authority of the authors. If a given author is considered as an authority in his or her field –because the public intuitively or rationally believes it to be the case (Bocheński 1989: 62), because the public refers to the author's formal education and diplomas, occupational specialisation, professional experience, and reputation among experts (Wilson 1983: 21-22), or because of many other reasons (De Georges 1985: 34-42) – then the text that the author writes is authoritative. And considering the similarities between the tasks performed by authors and editors, if the latter are considered authorities in their fields, then the texts that they produce are equally authoritative.

Reviewers within my sample seem to pay particular attention to the authors' occupational specialisations, professional experiences and reputations, as seen in 36 cases. Typically, a headcount of the experts involved is provided along with a breakdown of their area of expertise and their country/region/institution of origin. At times, the credentials of the editors and those of the members of the editorial board are also specified. Reviewers also seem to care about the number of people involved in the development of the encyclopaedia under scrutiny, as seen in 38

cases. In general, great number, high level of expertise and high diversity of authors and editors are considered a guarantee for authority; there are, however, a few reviewers who disagree. Van Loon (2006), in particular, complains that, in the case of the *Encyclopaedia of Geology*, having a 26-person advisory board on top of an editorial panel is counter-productive because it jeopardises the balance in topic coverage and hinders the control of incoming manuscripts.

Reference to the Authority of Publishers and to the Publishing History

Reference to the authority of the publisher is sometimes used by the public to assess the authority of a given text because some publishers are known to be 'big producers of works of high quality' and 'the winners of the struggle for recognition of cognitive authority' (Wilson 1983: 45-46). In fact, 'a publishing house can acquire a kind of cognitive authority, not that the house itself knows anything, but that it is thought to be good at finding those who do and publishing their work' (Wilson 1983: 168). In other words, because a publisher is known to work with many authors who are authorities in their fields, it is assumed that any text from the same publisher would also be written by authors of similar calibre. But in the process of assessing the authority of a text, the public also refer to its publishing history. Indeed, 'the issuance of several successive editions and translations serves as an indirect test of authority, counts as an extraordinary accomplishment, since for most texts the first edition is also the last' (Wilson 1983: 168). The underlying argument is that a text, which is translated or reprinted, must be highly demanded by the public, possibly due to the superiority of its content; and a text which is re-edited must be a better, or at least an updated, version.

Within my sample, the name of the encyclopaedia publisher is typically provided in the title of the book review, along with other information necessary to identify the encyclopaedia under scrutiny (the title, the name of the authors, the year of publication, etc.). However, the publishers' credentials are never specifically discussed in any part of the review. By contrast, the development process and the publishing history of the encyclopaedia attract more attention. In particular, the amount of time and effort needed for the development of an encyclopaedia is readily mentioned. Yet, it is unclear which is preferable: 'a collection which represents over 40 years of labour,' as Buster (2001: 1249) reports on *The Encyclopedia of Visual Medicine*, or 'an encyclopaedia which was written and published under two years,' as Clements (2002: 106) reports on *The Encyclopedia of Arthropod-Transmitted Infections of Man and Domesticated Animals*. The case of reprints and re-editions is clearer in that reviewers seem to value them. They readily mention not only the date and number of reprints and re-editions but they also typically provide information pertaining to the success and authority of the earlier versions. For instance, regarding *Anaesthesia and Intensive Care A-Z: An Encyclopedia of Principles and Practice*, it is explained that 'the first edition became so popular that reprints were made in 1996 and 1997' (Tang 2000: 297), and that

'the latest edition has a lot to live up to as its forerunner is well established as a fundamental anaesthetic guide, but [it is believed] it will achieve this comfortably' (Jones & Columb 2004: 300). Some reviewers also particularly insist on specifying the rate of update as well as the amount of change in content between reprints and re-editions. Talking about the *Encyclopedia of Virology*, Desselberger (2009: 140) for instance explains that 'the third edition has been prepared nine years after the second edition and has been updated substantially, commensurate with the enormous amount of new data in all areas of virology and increasing the size of the work from 3 to 5 volumes.'

Something which is related to the publishing history and found within a couple of book reviews but which is not explicitly mentioned in the literature on cognitive authority is the possibility for some encyclopaedias to be modelled on other authoritative works. For instance, Fisher (2009) reports that *Epilepsy A to Z: A Concise Encyclopedia* was derived from the well-known *Dictionary of Epilepsy*. Although not stated explicitly, reviewers seem to be of the opinion that part (if not all) of the authority of the model is expected to be passed on to any text which derives from it.

Reference to the Recommendation from Other People and Institutions

Another strategy commonly used by the public in the process of choosing which text to consider as a cognitive authority is the reference to the recommendation from other people which are already recognised as cognitive authorities (parents, teachers, etc.), or not. A book reviewer – and by extension the reviews he or she writes, such as those analysed in the current paper – offer indirect recommendation on which text to consider as cognitive authority. However, it is crucial to check who the reviewer actually is because

> if the reviewer already has cognitive authority for us, his review constitutes a personal recommendation (or not). If we are given sufficient information about the reviewer, along with the review, we may be able to arrive at an estimate of his authority. If the reviewer is unknown, his judgment may mean nothing, while if he is an anti-authority, unreliable and wrong, his praise may be fatal to the works he reviews. (Wilson 1983: 168)

As a general rule, only recommendations from experts should matter (Wilson 1983: 68), along with the recommendations from librarians (Wilson 1983: 165-196) as the latter know how to recognise cognitive authorities from practice and from principles already widespread within their profession. Additionally, recommendations from reputable institutions –which Wilson (1983: 168) refers to as 'institutional endorsements'– can be accepted. Typical examples are the case of texts published by a governmental agency or by a state printer and the case of texts sponsored by a learned society or by a professional organisation. Even the award of a prize to a text (or to its author) or the use of a text as a textbook in an educational institution can be seen as forms of institutional endorsement.

In 74 out of the 80 reviews from my sample, reviewers warmly recommend the purchase and the use of the encyclopaedias under scrutiny despite the fact that the latter are often reported to contain flaws and shortcomings. There are only three cases where reviewers do not recommend the encyclopaedia and one case where the reviewer does not provide any form of recommendation at all.

Although reviewers sometimes talk about the experience of other people with the encyclopaedia under review, they never report of any direct recommendation from these people, or from librarians. Also, out of 80 reviews, only the one written by de Silva (2002) refers to some form of institutional endorsement. In this case, an institution – the American Psychological Association – is mentioned to be collaborating with a publisher – the Oxford University Press– on the publication of the *Encyclopaedia of Psychology*; however, no additional detail, which could be used to get a better picture of the potential authority of this encyclopaedia is provided. Obviously, the readers are expected to know that the American Psychological Association is a prestigious institution within its field. This expectation is legitimate since the review is published in a journal for American psychologists; otherwise, the implication of the involvement of this institution in the development of this encyclopaedia would be lost on the readers. This is also the only case where the name of the publisher is mentioned in the core of the review. Because American psychologists also probably know of the Oxford University Press, the publisher's reputation can contribute towards establishing the authority of the encyclopaedia, as explained in earlier section of this paper.

Reference to the Genre

It is possible to find cognitive authority without any reference to the people who are writing, publishing or recommending a particular text. Wilson (1983: 184) explains that authority can be implied when the text belongs to a genre already recognised as authoritative, which is the case for all reference works. Then, the public only needs to check whether the text actually respects widespread expectations on the genre or not.

In the majority of the reviews within my sample, there is a description of the encyclopaedia under scrutiny (in particular the size, the layout of the text, the appearance of the illustrations) even if the length and amount of details provided vary from one review to another. A few times, adherence to common expectations, norms and standards within the world of encyclopaedias is also hinted. For instance, Bianchi Porro (2006: 70) writes: '*As expected*, all the articles are arranged in a single alphabetical reference by title/…/ article titles begin with the keyword or phrase indicating the topic, followed by any generic term,' and immediately adds: 'Articles are arranged *in a standard format* starting from title, glossary, defining statement, body of the article, cross-references and further reading' (emphasis mine). It is explained that 'the readers are immediately looking for a 'standard look and feel' ' (Kennard et al. 2005: 206). When widespread expecta-

tions, norms and standards are not respected, encyclopaedia authority is swiftly questioned, as clearly illustrated in the following comment:

> Is the *Encyclopedia of Soils in the Environment* really an encyclopaedia? Any layman would probably say yes looking at the four glowing red covers with gold lettering– that is certainly how an encyclopaedia should look. But when considering the length of an entry, it is doubtful as the average entry is a mini-review or article of about 8 pages, and not a concise and informative 300-word piece of information. (Hartemink 2006: 240)

Test of Time, Test of Intrinsic Plausibility, Test of Contentment

As a way of recognising cognitive authority, Wilson (1983) suggests three additional tests which the public can apply. Firstly, there is the test of time whereby the public is assessing whether the text was published within a relatively acceptable period. This test highly depends on the topic as, in 'conservative sciences,' the rule is: the older the better; whereas in 'progressive sciences,' it is the total opposite. Secondly, there is the test of intrinsic plausibility which consists of a rapid assessment of a brief excerpt of the work. This test not only refers to the perceived plausibility of the content but also takes into account key characteristics such as the school of thought, the theoretical framework, or the research paradigm. We can use our background knowledge of and expectations on the topic to help us assess the work. In practice, the rule is simple:

> If the sample of text we read strikes us as nonsense, we are unlikely to continue; if it seems eminently sensible, we may read on. (Wilson 1983: 169)

Finally, the last test for recognising cognitive authority – which Wilson (1983: 169) calls 'a test of credibility' but which I would call 'a test of contentment' – is to ask: 'Need I look further or can I take this source as at least provisionally settling the matter?' In practice, we generally start by evaluating whether whatever text already available to us seems authoritative enough for our taste. If the text fails to directly respond to and amply satisfy our needs, only then would we search until we find something of satisfactory quality.

Nothing on the test of time, as explained above, is mentioned in the 80 reviews within my sample. By contrast, the test of plausibility and the test of credibility/contentment seem to be embedded within the quality assessment that reviewers conduct on the encyclopaedias. Large portion of book reviews are dedicated to detailed quality assessment of the entire encyclopaedias, of specific sections, or of specific entries. In this process, the reviewers pay the greatest attention to the quality of the content by focusing – in decreasing order of frequency – on the completeness and informativeness; on the currency, clarity, objectivity, reliability and accuracy; and finally on the stability and representativeness of the information provided. This last parameter – which I define as conformity with the general expectations regarding encyclopaedias, as well as conformity with conven-

tions specific to the subject field – combines the test of the genre and the test of plausibility mentioned earlier in this paper.

Regarding the test of plausibility, reviewers often compare the content of encyclopaedias with what is commonly discussed within the scientific community. Two examples can be given as illustration. On the content of *The Encyclopedia of Mass Spectrometry*, it is written:

> *As one might expect*, much of the subject matter of Chapter 10 involves reactions of carbanions/…/. *Logically enough*, the topics of ion chemistry are divided into three chapters: Chapter 8 on neutralization and charge reversal; Chapter 9 on positive organic ion chemistry; and, Chapter 10 on negative organic ion chemistry. (Wilkins 2004:I, emphasis mine)

Similarly, on *The Encyclopedia of Arthropod-Transmitted Infections of Man and Domesticated Animals*, it is explained:

> This book follows the convention that parasites and pathogens can be transmitted by vectors, and that infections also can be transmitted in that way, but that diseases, even infectious diseases, are not 'transmitted'. (Clements 2002: 106)

Regarding the test of credibility/contentment, firstly, there are a few cases where reviewers actually present the encyclopaedias under review as a direct response to an active demand from the public. For instance, Carr (2001) talks about the encyclopaedia as a timely effort in that the publication occurs at a time when the topic covered is of great concern for the public, thereby implying that the latter is actively looking for texts on the matter. In fact, even reviewers acknowledge that it should not be taken for granted that the public would always be looking for the information offered within encyclopaedias. Castracane (2003: 446) reports for instance on the *Encyclopedia of Hormones*: 'It is difficult to imagine an individual with an interest in introductory information over such a broad range of endocrine topics.' Secondly, there are other cases where reviewers claim that the encyclopaedia under review amply satisfy the public's need, For instance, de Silva (2002: 1242) presents the encyclopaedia as 'a first place to look up a topic, and as a source that points one towards further reading' whereas Sparkman (2004: 763) claims that the encyclopaedia 'will save countless hours of searching through many references,' i.e. the readers would be so satisfied that they would not need to look for other texts.

Attractiveness as a Way of Increasing Encyclopaedias' Chance of Becoming Cognitive Authority

Before concluding this paper, I would like to comment on one aspect of texts which – as far as I am aware – is not explicitly discussed by neither Bocheński, De George, nor Wilson, but which is repeatedly mentioned in book reviews. I am referring to what I call the 'attractiveness' of a publication. A particular work is not only attractive because it may provide the readers with the information needed

to understand a given topic, it is also considered attractive because of the writing style, the graphical illustrations, the general appearance or the external packaging. It could be argued that these features not only grab the readers' attention, but they also provide pleasant feelings during the reading and encourage the readers to read further, even on topics they may not have been looking for. For encyclopaedias, which have the widespread reputation of being boring and forbidding despite enclosing invaluable knowledge, attractiveness contributes to hold the readers' attention long enough until the value of the information presented permeates the readers' mind and convinces them of the authority of the work as a whole. Some of the features mentioned above may be used primarily by authors to improve the informative value of a given publication and by publishers to increase the market price; but I would argue that they may also be used by the public as one of a number of pragmatic steps towards finding authoritative texts even they may not be considered as a legitimate basis on which authority should be grounded.

In fact, attractiveness is a feature of text, which is often discussed by researchers who study information trustworthiness and credibility. For instance, Teun Lucassen and Jan Maarten Schraagen(2010) indicate that, in general, the longer a text and the higher the number and quality of relevant images used as illustration, the greater its chance of being trusted. Helena Francke and her collaborators (2011) add that it is generally considered better if the text is well structured and if the publication is in print rather than in digital format. Obviously, no universal rule can be set as the same feature of a given publication may be perceived differently based on the individual reader's expectations in a given situation. Indeed, there are cases where long and detailed texts can deter the readers (Lackaff & Cheong 2008), complex images can have little impact (Richman & Wu 2008), and online materials can be more attractive than books (Biddix et al. 2011).

In as many as 78 out of 80 reviews within my sample, there are descriptive comments pertaining to the attractiveness of encyclopaedias: on the clarity and arrangement of the text, on the number and aesthetic value of the illustrations, on the quality of the typography and the binding (in the case of printed encyclopaedias), or on the user-friendliness (in the case of digital and online encyclopaedias). For example, it is written regarding the *Encyclopedia of Geology*:

> My first reaction when I inspected the set of books was: 'What a [sic] beautiful books.' They are well bound, very well printed and the illustrations (the book is fully printed in four colours, but there are, of course, some black-and-white photographs and drawings) are almost all attractive... (van Loon 2006: 134)

Reviewers readily praise these encyclopaedias, which are pleasing to the eyes, but they also seem to value those, which appear serious and have an air of authority. By contrast, any shortcoming may adversely affect the way the encyclopaedia is perceived by readers, as illustrated by the comment on the *Chemical Engineer's Condensed Encyclopedia of Process Equipment*:

> After receiving this book for review I started browsing through it and that gave me an as yet unidentified bad feeling. Then I started reading some entries /…/, although it remained difficult to pinpoint what the real problem was I had with the book. /…/ The book contains a lot of illustrations to elucidate the text, but most of them are of very bad quality. This is where my son helped me out: a lot of illustrations have apparently been picked from other publications and have been adapted in size and/or form to fit the space. This has led to distorted equipment (ellipses instead of circles) and gives the impression that process equipment is full of ellipsoidal rotors, pulleys, vessels, etc. (van der Meijden 2001: 338)

Some reviewers seem more eager than others to talk about the attention-grabbing potential that encyclopaedias may have, as illustrated by Lawler's account of his experience with the *Encyclopedia of Marine Mammals*:

> There is the value of the unexpected things that one stumbles upon by curiosity and find attractive: I began reading (sampling) the book by first looking for articles by authors of whom I know. One of the first of these was Tim Gerrodette, who wrote the 'Tuna-Dolphin Issue' section. Despite my intention to turn directly to that section, my eye was continually caught by other interesting sections. I took well over two hours to get to the Tuna-Dolphin section, steps along the way including diving physiology, surveys and feeding strategies and tactics. (Lawler 2002: 135)

In general, most reviewers simply use very warm and expressive words to point to the potential emotional response a text may rise in the readers: 'An absorbing read!' (Petrie 2010: 215), 'This was fascinating' (Lord 2006: 125), 'Included is a long chapter entertaining as a novel and addressing everybody' (Skovgaard 2008: 213), 'It certainly will make any reader discover the amazing history of /…/' (Modi 2008: 356), 'Most readers will be surprised to discover that /…/' (Wanamaker & Grimm 2004: 1275), etc.

Concluding Remarks

In addition to pointing out the influence of attractiveness in increasing the chance of encyclopaedias of becoming cognitive authorities, the analysis of the 80 book reviews conducted in the current paper indicates that book reviewers generally offer a very detailed – albeit sometimes rather concealed – discussion on encyclopaedia authority. Firstly, regarding the expected roles played by cognitive authorities, encyclopaedias are portrayed as valued reference materials, which effectively inform and guide the public.However, they are sometimes criticised for failing to provide clear information on the state of knowledge, particularly in the case of uncertain and controversial topics. Moreover, the intellectual influence that encyclopaedias may exert on the public (if any) is almost never explicitly acknowledged. Secondly, regarding the measure of encyclopaedia authority, the scope of encyclopaedias is often greatly described; whereas only incomplete assessments of the degree, extent and intensity of encyclopaedia authority are provided, often through alternative and somewhat imprecise methods. Finally, regarding the basis for encyclopaedia authorities, the majority of the tests generally prescribed to jus-

tify authority in texts are found in book reviews. There are many comments pertaining to the credential of encyclopaedia authors and editors, to the rigor of the development process, to the timeliness of the publishing history, to the plausibility and credibility of the content, to the adherence to widespreadnorms and standards within the genre, and to the degree of contentment of the readers with the work; but nothing on the test of time. Overall, book reviews tend to present encyclopaedias as invested with less authority than in their traditional image of absolute authorities.

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How Readers Shape the Content of an Encyclopedia:
A Case Study Comparing the German *Meyers Konversationslexikon* (1885-1890) with *Wikipedia* (2002-2013)

By Ulrike Spree

Abstract

How knowledge is negotiated between the makers of encyclopedias and their audiences remains an ongoing question in research on encyclopedias. A comparative content analysis of the published answers of letters to the editor of the German *Meyers Konversationslexikon* (*Korrespondenzblatt*) from 1885 and the discussion pages of the article potato of the German *Wikipedia* (2013) reveals continuities as well as changes in the communication between encyclopedia producers and their audiences. The main reasons why readers and editors communicate are the need for updated factual information, an exchange on editorial principles and the intellectual exchange of ideas on ideological and philosophical questions in relation to the encyclopedic content. Editors and readers attach a lot of importance to the process of verifying information through bibliographical references. Whereas, for the editors of *Meyers Konversationslexikon* the leading role of experts remains undisputed, Wikipedians work in a contradictory situation. They are on the one hand exposing knowledge production to a permanent process of negotiation, thereby challenging the role of experts, on the other hand relying strongly on bibliographical authorities. Whilst the reasons for the communication between readers and editors of *Meyers Konversationslexikon* and among *Wikipedia* contributors coincide, the understanding of the roles of readers and editors differ. The editors of the *Korrespondenzblatt* keep up a lecturing attitude. As opposed to this, administrators in *Wikipedia* want to encourage participation and strive to develop expertise among the participating contributors. Albeit power relations between administrators, regular authors, occasional authors and readers continue to exist they are comparatively flat and transient. Regardless of these differences, the comparison between *Meyers Konversationslexikon* and *Wikipedia* indicates that the sine qua non for activating an upwards spiral of quality improvement is that readers accept, learn and cultivate common rules – including how to deal with dissent – and identify with the product at least so far as that they report mistakes.

Keywords: *Wikipedia*, *Meyers Konversationslexikon*, case study, literary reception, general encyclopedia, information behavior, user study.

Introduction

Many years ago I grabbed a copy of the fourth edition dated 1964 of the *Junior Pears Encyclopaedia*, a one-volume young people's reference book, in a second hand bookshop. In the chapter "About This Book" the editor Edward Blishen reflects on the question, "what an encyclopedia is" and starts his strain of thought with an ostensible opposition: "It's [an encyclopaedia] technically […] a book that tells you everything about everything […] but in practice most encyclopaedias have to make a fairly sharp choice of the subjects they shall cover, bearing in mind the audience to which they are addressed." He finishes his preface with a plea and a pledge: "[…] a book like this one ought to be shaped not only by a body of contributors but by a body of readers" (Blishen 1961: 5). The question how knowledge is negotiated between the editors of encyclopedias and their audiences remains an ongoing question in research on the history of encyclopedias (Herren; Michel; Rüesch 2007b: 7).

Selectively contrasting the talk pages and the version history in *Wikipedia* "the free encyclopedia that anyone can edit" (Wikipedia: Welcome to Wikipedia 2013) to the regularly published responses to letters to the editor of the 4th edition of the *German Meyers Konversationslexikon* (*Korrespondenzblatt* (Vol. 1 – Vol. 18)(1885-1890) this study explores differences and similarities between the ways in which readers shape the content of an encyclopedia in the 19th century and in the 21st century. The comparison is intended to root the approach of "an encyclopedia that anyone can edit" into the broader tradition of encyclopedic production and to carve out what is really unique about the way in which knowledge is negotiated in *Wikipedia*. The analysis focuses on the following two research questions: 1) What are the occasions for the communication between editors, readers and contributors and what underlying causes of negotiable knowledge do they indicate? 2) What information on the understanding of the roles of editors, readers and contributors is revealed?

The paper is organized as follows. In the first two paragraphs the encyclopedic tradition is briefly outlined to contextualize *Wikipedia* and *Meyers Konversationslexikon* within the history of encyclopedia production. The main part of the paper consists of a case study comparing the communication between editors and readers in the responses to letters to the editors of *Meyers Konversationslexikon* 1885-1890 and the discussion of the article potato in *Wikipedia* 2002-2013. The conclusion carves out continuities and changes in the communication between editors and readers and links them to modes of encyclopedic production.

Encyclopedia – An Adaptive and Customisable Genre

The concept of encyclopedia underwent many changes and is the object of intense philosophical discussions (Hennigsen 1966; McArthur 1986). For the purpose of

this article a broad understanding of the concept encyclopedia that is in line with the definition given in *WordNet* is applied.

> encyclopedia, cyclopedia, encyclopaedia, cyclopaedia (a reference work (often in several volumes) containing articles on various topics (often arranged in alphabetical order) dealing with the entire range of human knowledge or with some particular specialty) *(WordNet Search 3. 1: Entry encyclopedia).*

Encyclopedias are characterized by:

1. a structured arrangement of entries following a given ordering principle that aims to ease the use of the reference work;

2. an atomistic approach that favours and encourages a selective access to information and is usually not meant to be read linearly;

3. a primarily practical-informative purpose and the aim to eliminate doubts on the reader's side regarding the meaning and use of individual words and concepts (Spree 2013: 550ff).

During the cause of the 19th and 20th centuries general reference works changed considerably. From a text-book-like, in parts moralizing and opinion-forming form of knowledge transfer, its role changed to a kind of prompter or stooge for the educated conversation, a function inseparably connected with the German *Konversationslexikon* (conversational encyclopedia) that was shaped by the internationally well known Leipzig based publishing house *Brockhaus* (Keiderling 2005). Since the beginning of the 19th century the rapid increase of published knowledge induced the major publishing houses to a high amount of diversification of the encyclopedic genre that served the growing audience. At the upper end of the price range we find voluminous comprehensive encyclopedias like the *Encyclopaedia Britannica* written and edited by more than 2 000 contributors, among them well-known academics, and a large amount of namely signed articles. The content is presented alphabetically under a broad lemma that discusses the topic within a wider context. The number of entries lies between 50 000 and 60 000. Usually, references to further literature are provided. Concurrent with the development of the comprehensive encyclopedia, since 1860 the conversational encyclopedia was gradually converted into a type of reference work for which the name *Universallexikon* (universal lexicon) was coined. A coherent comprehensive presentation of larger topics was replaced by a more fragmented presentation under a narrow lemma to grant access to pieces of (factual) knowledge (Spree 2013: 551). In the 20th century encyclopedia production went through further diversification. The German encyclopedia market was shaped by the two main competitors, *Brockhaus* and *Meyer*, which merged in 1984. After the German unification the sale of printed encyclopedias boomed for the last time (Keiderling 2005: 270-378). Since 2005 the competitive pressure on the print-market for encyclopedias by the free Internet encyclopedia *Wikipedia* has risen noticeably and is referred to as the main reason for the cessation of long-standing encyclopedia projects.[1] Notwithstanding the special position *Wikipedia* occupies on the encyclopedic

market, regarding its business model as well as the collaborative mode of production, the phenomenon *Wikipedia* can only be fully understood against the background of the rich encyclopedic tradition (Pscheida 2010: 441ff.). Among others, to confront ahistorical discussions about *Wikipedia*, Reagle & Loveland (2013), drawing on examples from antiquity onward, pin down the way in which encyclopedic knowledge is produced in *Wikipedia* in a long tradition. They identify three modes of content production that characterize encyclopedic production then and now: (a) compulsive collection describes encyclopedias that mainly owe their existence to the collecting passion of individuals, (b) stigmeric accumulation describes a way of text production based on revising, combining and rewriting existing texts, in (c) corporate production a group of (expert) authors collaborates more or less closely under an editor or editorial board. Reagle and Loveland conclude that the "distinction between a collectively authored *Wikipedia* and its individually authored predecessors turns out to be murky" (2013: 5). The basic principles Wikipedians adhere to, the programmatic *Five Pillars*, are an expression of this ambivalence between the commitment towards a long series of precursors from antiquity onwards and the pursuit for a new and more open way of "content" production. Whereas the first and fundamental principle states "Wikipedia is an encyclopedia: It combines many features of general and specialized encyclopedias, almanacs, and gazetteers", the third pillar underlines that "Wikipedia is free content that anyone can edit, use, modify, and distribute" (Wikipedia: Five Pillars 2013). This striving for openness also becomes apparent by the use of the term content instead of more emphatic and contested concepts like knowledge or information.

Encyclopedias and their Audiences

What the lexicographer and educationalist Edward Blishen 1964 (cf. Introduction) described as a requirement – the shaping of an encyclopedia by its readers – is the general case. Readers always have directly or indirectly influenced the content, structure and organization of encyclopedias in various ways. Numerous studies on encyclopedias and their audiences establish not only the social proximity between lexicographers, encyclopedia authors and readers but also the transition and fluency between the roles of the authors/editors and the reading audience (Darnton 1979; Spree 2000: 89 ff; Herren, Paul & Rüesch 2007b: 9-74; Prodöhl 2011: 32-66; Reagle & Loveland 2013). Having the same background as their readers, encyclopedia authors and editors demonstrate a firm understanding of their readers' needs and ways of thinking. At the same time, the body of editors often was anything but homogenous and characterized by a thick network between society and editorial board (Prodöhl 2011: 143).The emergence of new reading audiences, for example after the French Revolution and during the period of the Wars of Liberation (1813-1815) or the European revolutionary movements (1830 – 1848), al-

ways fostered new ideas for lexicographic products like the genres of the German conversational encyclopedia or encyclopedic dictionaries aimed at the so called "lower orders" (Penny Cyclopedia: Prospectus 1832*)*. Apart from these indirect influences, readers were integrated directly into the production process and acting as external experts or informants – the large encyclopedias resorted to a huge army of informants among academics, diplomats, military people or travellers (Spree 2000: 89-149).

Case Study: How the Audience Shapes the Encyclopedic Content 1885-1890 and 2002-2013 – Between Critical Reader and Collaborator

Earlier research situating *Wikipedia* within the long tradition of encyclopedic production is predominantly based on the comparison with well known (lexicographic as well as philosophical) projects of the 18th century, like the French *Encyclopédie* by Diderot and d'Alembert or the *Encyclopedia Britannica* (Haider & Sundin 2010, Reagle 2011: 18 ff, Reagle & Loveland 2013) as well as with visionary encyclopedic approaches like Paul Otlet's Mundaneum (1910) or H.G. Wells World Brain (1936) (Reagle 2011: 17-25). In the present article knowledge production in *Wikipedia* is compared to a popular late 19th century German encyclopedia. In addition to the mentioned encyclopedias, *Meyers Konversationslexikon* is a further adequate and worthwhile object of comparison, since our contemporary everyday notion of what to expect from an encyclopedia is not less influenced by the aforementioned philosophically and epistemically ambitious and sophisticated projects than it is by the late nineteenth century confinement of the genre to a "fact-bound everything about everything" (Bates 1986: 37ff, Spree 2000: 327).

Meyers Konversationslexikon

Initially founded in 1826, the economic success of the publishing house of *Meyer's* encyclopedic productions — it traded under the name *Bibliographisches Institut* — as well as its reputation date from the publication of the 52 volumes of the "Grosse Conversations-Lexikon für die gebildeten Stände" (Large conversational encyclopedia for the educated classes) 1839-1855 (Sarkowski 1976: 10ff). The preface of the first volume was a fervent plea for revolutionary change in the German states. The publication appeared on the scene as a liberal democratic competitor to *Brockhaus'* encyclopedic productions defending free access to knowledge and the ideas of the 1848 revolution (Spree 2000: 229 ff.).[2] During the 19th century the republican liberal-democratic political orientation of the *Bibliographisches Institut* was gradually replaced by a more and more nationalistic tendency, supporting the idea of a constitutional monarchy in the German Reich.

The 4th edition of *Meyers Konversationslexikon* (1885-1892), discussed in this case study, indicates a decisive change in the publishing policy of the *Bibliographisches Institut*. The fact that the encyclopedia was published without a programmatic preface can already be interpreted as an implicit dedication to factual information abstaining from any political or ideological positioning. It was only in the preface to the 6th edition (Zur sechsten Auflage von Meyers Konversations-Lexikon: V) from 1909 that the editor explicitly distanced the publication both from the mainly entertaining and conversational direction of the previous editions and from taking sides with right-liberal persuasions in favor of an assumed superior national interest. In a highly ideological text the presentation of positivist scientific knowledge, which served the requirements of a lay audience as well as the university scholar and which was in the national interest, are described as neutral and unbiased (Zur sechsten Auflage von Meyers Konversations-Lexikon: VI). Thus, the 4th edition retrospectively occupies a transitional position between the understanding of the genre of the *Konversations-Lexikon* as presenting empirical knowledge from a current (liberal political) perspective in a comprehensible and entertaining way and its demeanor as an unbiased authoritative academically vetted source of correct knowledge. The 4th edition was published between 1885 and 1892 in 19 volumes comprising nearly 20 000 pages and about 97 000 lemmata. With 200 000 sold copies the edition was economically very successful (Sarkowski 1974: 118). Most copies were either sold by local bookstores or by travelling booksellers to an upper and middle class audience of business people, public servants and academics (Sarkowski 1976: 118; retrobib – Lexikonkauf 1890).

Wikipedia

Since 2006 the rise of the free online encyclopedia *Wikipedia* has been constantly accompanied by multifarious research. In their systematic review on research on *Wikipedia* Okoli and others (2012) report more than 300 publications regarding infrastructure, participation and community-building in *Wikipedia*. The precondition for *Wikipedia*'s enormous success was the introduction of the Wiki-Software in 2001. It allowed readers to read as well as edit entries directly via their browser. The fact that the Wiki-Software was able to log all changes encouraged the editors to refrain from formal editing in advance and from peer review process and to allow the publication of the articles immediately after an editorial change. Currently, the number of published articles (30 million articles worldwide, 4.3 million in the English version, 1.6 million in the German version) (Wikipedia: Wikipedia 2013) is unsurpassed by any other encyclopedic production. Regardless of the fact that being freely editable has persisted in principle until the present day, over the years Wikipedians have developed a complex organizational structure, which includes distribution of labor as well as a power structure distinguishing between contributors and members of the *Wikipedia* volunteers' bureaucracy, like administrators, checkusers or ombudsmen (Pentzold 2012; Simonite 2013).

These are mainly based on commitment (amount of contributions) as well as persistence of the respective protagonists,[4] and an entire body of rules and guidelines governing content production (Pscheida 2010: 347-387; Reagle 2011). Although, it is true that most *Wikipedia* users do not get actively involved (editors 33 174 (English) compared to over 19 000 000 (passive) users (Wikimedia: Wikimedia Report Card 2014), the transitions between authors and readers remain fluid.

Comparing the Communication Between Editors and Readers 1885-1890 and 2002-2013

Usually, collaboration between editors and readers/users can only be inferred implicitly from the encyclopedic entries themselves or from the surrounding texts, like prefaces, or uncovered by archival studies, as letters to the editor or the evidences of the communication of the editorial staff with external experts, normally remain unpublished (Spree 2000; Keiderling 2005; Prodöhl 2011). In this respect, the approach of *Wikipedia* grants a new level of transparency, as it not only offers a plethora of programmatic texts and editorial guidelines but also tools that allow readers to observe the *lexicographer at work*. The version history function records all changes of an article from the first emergence to the current version. Additionally, the production process is accompanied by a talk page that invites contributors to debate on a topic in a larger context or to comment on changes of the article. This amount of transparency of the encyclopedic production process via granting a live view into the workshop of the author/ editor is unprecedented in the history of encyclopedias, however not without precursors. Beginning with the seventh volume of the 3rd edition (1876-78), nearly each volume of *Meyers Konversationslexikon* was supplemented by a so called *Korrespondenzblatt* (correspondence paper) consisting of – presumably a selection of – answers to requests and notifications by readers regarding the articles in the respective volume.

Methodological Approach

The subsequent analysis employs a combination of a hermeneutic close reading (Kain 1998) of the contributions and a qualitative content analysis (Mayring 2000) to a) identify expressed reasons for the communication, and b) to more closely describe patterns of communication between readers and editors (Konversations-Lexikon) or user/contributors and administrators (Wikipedia) in order to infer the roles and the habitus the answerer assumes (Coney & Steehouder 2000).

In a first step the genesis as well as the layout and format of the communication are described and analyzed. In the second step units of analysis are determined. In the case of the *Korrespondenzblatt* the response to one letter to the editor (figure 3) is regarded as one communication. Analogically, regarding the ver-

sion history (figure 1) and the talk pages (figure 2), a version change or a topic in the archived discussion pages (topics from 1 to 11 on figure 2) are the basic unit of analysis. The statements are coded for a) reasons for communication like for example request for or passing on of information and b) the assigned rhetorical roles of editors and readers taking into consideration aspects like formality of communication, assumed previous knowledge and politeness. As the focus is on the communication purposes and structure and the topics as such are neglected the comparison of the discussion on multifarious encyclopedia entries (*Korrespondenzblatt*) to the talk pages of the single entry (that as such covers numerous topics) potato in *Wikipedia* is justifiable. The entry potato was chosen as an example for a not obviously controversial topic on an everyday object.[5]

Figure 1: Screenshot *Wikipedia* Version History

Figure 2: Screenshot *Wikipedia* Talk Pages

Korrespondenzblatt to *Meyers Konversationslexikon* (1885-1890)

In a preface the reasons for starting the *Korrespondenzblatt* are summarized. It owes its formation to the numerous letters to the editor; mainly corrections of petty mistakes and typos as well as improvements of articles employees could not conduct due to insufficient information. The *Korrespondenzblatt* also aimed to explain the structure and organization of the encyclopedia and give background information from the encyclopedia workshop. The editor assumes this information could be useful not only for the individual enquirer but for the audience at large (*Korrespondenzblatt* II 1876: 1). As the *Konversationslexikon* was published in separate numbers the answers were initially published on the cover of each number and eventually collected and published as appendix to each volume. The following analysis is mainly based on the *Korrespondenzblatt* for the 4th edition.[6] The entire *Korrespondenzblatt* amounts to 45 pages. The layout is similar to the main part of the encyclopedia: the text is printed in two columns and the names of the enquirers replace the entry lemma (figure 3). Through this layout decision the

editors succeed in simultaneously presenting the responses as a germane part of the *Konversationslexikon* and appreciating the enquirers. At the same time a certain degree of formality of the communication is retained. Presumably, the answers were written by a member of the editorial team, who was responsible for the respective topic (Wie ein Konversationslexikon gemacht wird 1879: 771). The topics of the correspondence comprise everything from factual information on geographical details to political and administrative topics to scientific and philosophical questions.

1012   Korrespondenzblatt zum achtzehnten Band.

franken (0,16 Proz.), Unterfranken (—0,06 Proz.) und Oberpfalz (—0,03 Proz.), im württembergischen Jagst-kreis (—0,11 Proz.), in Mecklenburg-Strelitz (—0,08 Proz.) und im oldenburgischen Fürstentum Lübeck (—0,03 Proz.).

Im J. 1890 gab es 150 Städte mit mehr als 20,000 Einw., darunter Berlin mit mehr als 1½ Mill., 26 Städte mit mehr als 100,000 Einw. (seit 1885 neu hinzugekommen Stettin, Krefeld, Aachen, Halle a. S. und Braunschweig), 21 Städte mit 50—100,000 Einw. (neu hinzugekommen Charlottenburg, Duisburg und Darmstadt) und 103 mit 20—50,000 Einw. (neu hinzugekommen Solingen, Forst i. L., Düren, Zeitz, Quedlinburg, Ratibor, Lüneburg, Wandsbek, Grau-denz, Minden, Brieg, Pirmasens, Bautzen, Reichen-bach, Kannstatt, Gießen, Eisenach, Apolda, Olden-burg und Greiz). Die Städte mit mehr als 20,000 Einw. hatten 1890 eine Gesamtbevölkerung von 10,494,345 Seelen gegen 1885: 8,819,338 oder mit Einschluß der in den letzten Jahren einverleibten Vor-orte 9,094,046 Seelen. Ihr Wachstum betrug 1885 bis 1890 im jährlichen Durchschnitt 2,86 Proz. (1880 bis 1885: 2,23 Proz.), das aller übrigen Orte nur 0,61 Proz. (1880—85: 0,37 Proz., dagegen 1875—80: 0,89 Proz.). Vgl. auch die im Artikel Deutschland (S. 190 dieses Bandes) gegebene Übersicht.

Karl Michel in Breslau. Unter Papierabdruck versteht man in dem angegebenen Fall den mit Hilfe von starkem, angefeuchtetem Papier gewonnenen Ab-klatsch von Inschriften, flachen Reliefs u. dgl. Dieses Verfahren wird neuerdings von den Archäologen bei wissenschaftlichen Forschungsreisen angewendet, um möglichst getreue Kopien zu gewinnen, wenn Zeit und Ort nicht die Aufnahme einer Zeichnung oder Photographie gestatten. Das Papier wird mit einer Bürste in die Vertiefungen gedrückt und behält nach dem Trocknen die Eindrücke. Man kann auch solche Abdrücke gewinnen, indem man die Oberfläche des Steins mit einem farbigen Pulver bestreut und das feuchte Papier aufdrückt.

S. P. in Olmütz. Das Buch von Pfanhauser:

dres ist für den nächsten Band des Jahres-Supple-ments vorbehalten, der Anfang 1892 erscheinen wird.

K. Werder in Wien. über die Datumwechsel-frage, die jüngst mehrfach in den Blättern besprochen wurde, finden Sie in vorliegendem Bande (S. 181) einen besondern Artikel, aus dem hervorgeht, daß ge-

Scheidelinie für Wochentag und Datum.

genwärtig eine absolut genaue Karte der Datum-grenze noch nicht gegeben werden kann. Das vor-stehende Kärtchen zeigt die Datumgrenze, wie sie nach den bis jetzt bekannten Verhältnissen anzunehmen ist.

Frau Therese S. in Mainz. Das weltbekannte

Figure 3: Clipping *Korrespondenzblatt* XVIII. Vol., 1890

An anonymous article about the third edition of *Meyers Konversationslexikon* in the illustrated magazine *Daheim* from 1879, based on "authentic notes", grants a rare insight into the workshop of an encyclopedia and is suitable to further contextualize the communication in the *Korrespondenzblatt* within the complete production process (Wie ein Konversationslexikon gemacht wird 1879: 770). According to this article, the lexicographic practice was characterized by a high amount of

division of labor between the editorial board, the authors and the editors of the individual articles. The main responsibility of the editorial board was to handle the wealth of material and to solicit qualified authors. The description of the actual production process corresponds to what Reagle and Loveland (2013) describe as "stigmeric accumulation": the 70 000 articles of the 2nd edition were cut out and pasted on independent paper sheets. Subsequently, the lines were counted to get an overview about the scale of the different knowledge domains. On this basis, the editorial board decided on the appropriate space for each subject field for the new edition. The editorial board also employed so called "Notizensammler" (note collectors) who monitored around 50 national and international newspapers mainly for biographical and geographical facts (Wie ein Konversationslexikon gemacht wird 1879: 770). The effective writing and editing was carried out by dedicated editorial teams in various university cities (770). The actual writing of the articles, according to the anonymous author, only accounted for a relatively small amount of work involved in the production of the encyclopedia. Particular attention had to be paid to checking of the listed "authorities", whereby the German "Autoritäten" refers to bibliographic sources as well as to eyewitnesses and personal informants (771). This corresponds with the introduction to the *Korrespondenzblatt* that assigns the letters from the subscribers a similar role as the personal informants and appreciates their "voices" as valuable hints for the execution of the project. The subscribers are cordially invited to carry on pointing to effective errors (*Korrespondenzblatt* II 1876: 1).

Wikipedia Version History and Talk Pages of the Articles Kartoffel/potatoe (2002-2013)

In *Wikipedia* the articles are written collaboratively. The editing process of the article "Kartoffel" conforms to the findings of Kallass regarding the writing process in Wikipidia. It is heterogeneous, unstructured and long (Kallass 2008: 3). The article Kartoffel developed gradually from a four sentences entry started in September 2002. Between 2002 and 2013 the article was edited more than 2696 times and has grown to 60 332 bytes by May 2013 (Wikipedia: Kartoffel: Versionsgeschichte (2013). By April 2004 a consolidated formal structure had been achieved and the article was suggested as excellent article. Since 2002 the community has been working constantly on the article, albeit at varying editing speeds. For the first 500 versions (2006-02-24) roughly 51 months were needed whereas the next 500 versions only took 8 months. The version history as well as the talk pages exhibit many small changes, like the addition of new facts as well as discussions on the structure and the transfer of content in separate articles.

The tone is factual, sometimes chatty and usually friendly. For instance, in 2004 the deletion of some passages in the article is discussed. User mmr insists on

the cancellations after the user M_mb had revoked them. In the end, user M_mb complies to the changes although – she/he explicitly mentions – she/he is not convinced. Common ground between the collaborators can be found as they both agree that two different articles should never share identical text (Wikipedia: Diskussion Kartoffel: Kandidat für "Exzellenter Artikel" 2004). By 2007 the article had changed so much through occasional additions that the structure got completely lost. The user Carstor, who also seems to have administering rights or at least a status above a normal registered user, suggested a complete restructuring of the article as it contained too much how-to information and had degenerated into a mere conglomeration of facts. Although, during the review process she/he obviously nearly lost patience and used strong language ("meine Fresse" (Bugger me)) she/he is careful to keep her/his fellow authors informed that she/he saved the previous version in case someone should disagree with the changes (Wikipedia: Diskussion Kartoffel: Stand vor dem Umbau 2007). In April 2007 Carstor entered the article in the list for quality management biology. As a reaction to this step a short discussion renegotiating author roles took place. A user complains that the page is – as he assumes – as a consequence of the quality management measure still blocked for further editing. Carstor resolves this as a misunderstanding explaining to the complaining user that he only needs to register as a user to be allowed to work on the article (Wikipedia: Diskussion Kartoffel: Stand vor dem Umbau 2007). Although, Carstor makes a considerable number of suggestions for the restructuring process, he is careful not to dominate the discussion and effectively achieves that users Griensteidl and Denis Barthel join in the revising process. Usually, the discussion remains factual spiced with scarce teasing remarks like Denis Barthel's "would I contradict a future main author" (Wikipedia: Diskussion Kartoffel: Stand vor dem Umbau 2007). To sum up, the *Wikipedia* community managed to constantly improve the article over a period of more than ten years. Dozens of contributors collaborated in different roles and with varying amounts of commitment.[7] Apart from a few blockings due to vandalism the contributors acted in concert and focused on their common topic. In the few cases of stagnation or discord the resorting to existing rules and guidelines (like neutral point of view, structure templates, incentives like labeling as article worth reading and agreed quality management tools) sufficed to calm the waves and stimulate constructive writing.

Continuity and Change in the Communication of Editors and Readers as Collaborators

The comparison of the version history and the talk pages in *Wikipedia* on the article potato and a close reading of the 19 issues of the *Korrespondenzblatt* (1885-1892) reveal a considerable amount of continuity in regard to the first research question concerning reasons for a communication between readers and editors,

respectively among *Wikipedia* collaborators with different levels of expertise. These can be subsumed under three main headings:

1) Satisfying the need of readers and contributors for updated factual information

A considerable part of the communication between readers and editors or among the contributors simply serves as an exchange of factual information.

a) Requesting additional information and/or updated information. Not surprisingly the communication between readers and editors or among collaborators simply serves the exchange of topical additional information. W. Walter wishes to be updated on the results of the census, Rud. Herman wants to know which river is longer, the Mississippi or the Amazonas (*Korrespondenzblatt* zum vierten Band 1885) and Dr. H. wishes elucidation on the name of Austrian military leaders (*Korrespondenzblatt* zum siebten Band 1890). Wikipedians constantly exchange and update information for example regarding the exact amount of starch in potatoes or their geographical origin (Wikipedia: Talk: Potato: Edit request 2012).

b) Asking for guidance for everyday life. Unlike *Meyers Konversationslexikon* as such, the *Korrespondenzblatt* provides the enquirer with detailed advice on practical questions like finding suitable accommodation for German nursing students in Paris or positive and negative effects of tobacco (*Korrespondenzblatt* zum fünften Band 1886). Independent of the actual work on the article itself, the authors of the article Kartoffel in *Wikipedia* discuss whether the amount of solanin contained in potato peel is harmful to humans. In the discussion they also resort to commonplace reasons like the eating habits of a contributor's grandmother (My granny eats them with the peels and she is healthy/fine) (Wikipedia: Diskussion Kartoffel: Kartoffelschalen Problem 2010).

2) Editorial principles

A large amount of the communication revolves around editorial aspects of the encyclopedia.

a) Suggesting editorial improvements. Readers of *Meyers Konversationslexikon* as well as contributors in *Wikipedia* make numerous suggestions regarding grammar; punctuation (Wikipedia: Talk Potato: Grammar review 2012) and layout or they exchange information on pronunciation. Reader P. V. in D. receives an extended answer on his request regarding the correct pronunciation of the family name Beaconsfield based on a personal request from the vicar of Beaconsfield (*Korrespondenzblatt* zum ersten Band 1885). In this category also belong *b) metadiscussions on the functions of an encyclopedia.* A recurring reason for communication between editor and readers is the reassurance about the purpose and function of an encyclopedia as well as negotiating what content should be included and excluded. The editors of the *Korrespondenzblatt* for example lecture their

enquiring readers that daily news, information on small languages, biographies of Greek aristocrats (*Korrespondenzblatt* zum dreizehnten Band 1889) or authors of trashy literature and not yet verified information are not incorporated in the encyclopedia (*Korrespondenzblatt* zum dritten Band 1886). In the *Wikipedia* version history and talk pages on the article Kartoffel / potato the contributors discuss intensively what content should be included or excluded like for example references to potato recipes (Wikipedia: Diskussion Kartoffel: Gerichte 2003). Although, the scope of *Wikipedia* regarding everyday culture is broader than that of the *Konversationslexikon* the exclusion criteria are similar and include the exclusion of daily news as well as not yet verified information. *Wikipedia* does not exclude biographies of authors of pulp fiction on principle, however the inclusion of biographies as a separate lemma is bound by certain conditions like "significant coverage" – *Wikipedia* even introduces the term of "low-profile individual" (Wikipedia: Who is a low profile individual? 2013) – and not of "mere short-term" interest (Wikipedia: Notability 2013).

3) Intellectual exchange of ideas on ideological and philosophical convictions

The communication between readers and editors as well as between the contributors of *Wikipedia* articles is also a forum for serious philosophical and political debates. In the *Korrespondenzblatt* we find a) *lengthy philosophical or academic discourses* on the meaning of various philosophical concepts like realism, conceptualism or the political role of Wallenstein (Korrrespondenzblatt zum vierten Band). Authors of the article potato in *Wikipedia* in 2012 discuss at some length the dispute between Chilean and Peruvian scientists whether the potato variety brought to Europe was adapted to long day conditions (Chilean) or short day conditions (Peruvian) (Wikipedia: Talk: Potato: Origin). In the context of encyclopedia production b) *claiming or contesting academic authority* can be interpreted as a more subtle form of dealing with ideological disagreement than an open dispute on ideological or political topics. In the *Korrespondenzblatt* a critical comment in an article of the *Konversationslexikon* on the ultramontane[8] historian Janssen is justified by remarking that protestant critics had founded their assessment academically and that parity is a non entity in academic appraisement (*Korrespondenzblatt* zum siebzehnten Band 1890). In this case recourse to academic/scientific authentification is used as a strategy to defend bias. In the talk pages on the German article "Kartoffel" ("potato") in 2007 the contributors discuss the relationship between science and truth and whether it is correct to simply equate scientific and true. The discussants compromise about the statement that a reference to a considerably reliable published source is more credible than the idea of some sort of user (Wikipedia: Diskussion Kartoffel: Einführung in Europa 2007).[9] Readers, editors and contributors of Meyer as well as of *Wikipedia* resort to c) *claiming and defending a (neutral) point of view*. In the *Korrespondenzblatt* we find a striking example of how referring to a neutral point of view can be used to

justify bias. Replying to a critical comment of Müller in Alt-Dombrowo the editor defends the national-liberal conviction of the *Konversationslexikon* claiming that the presentation of current political history cannot be written in a way that suits all political parties. He backs his response with recourse to historical scholarship. Historians had agreed, so the editor, that history could not and should not be objective und unbiased and that a historian had to write from a political conviction to assess political occurrences. Moreover, the national-liberal conviction is defended as a mediating political position. An adequate position to suit the encyclopedia's striving for completeness, correctness, justness and a lenient judgement that seeks to avoid extremes (*Korrespondenzblatt* zum siebzehnten Band 1890). References to the neutral point of view are common in the *Wikipedia* talk pages too, even in politically not controversial articles like potato. In the talk pages the wording "a really good salad" is discarded because the encyclopedic objectivity of the expression is contested as it sounded more like a housekeeping suggestion (Wikipedia: Diskussion Kartoffel: Verwendungszweck 2012).

Whereas the reasons for communicating between readers and editors of *Meyers Konversationslexikon* and among contributors of an article in *Wikipedia* coincide significantly the understanding of the role readers and editors should play in the production process — I investigated in my second research question — partially differ. In the *Korrespondenzblatt* as well as in *Wikipedia* readers/contributors appear as sovereign subjects, who demand and grant additional information. As the readers' contributions are not quoted directly in the *Korrespondenzblatt*, they can only be inferred indirectly. Mostly, from the air of the answer, it seems as if the editors are responding to an inquiring and self-confident audience. Even though the editors of the *Korrespondenzblatt* treat their readers respectfully on an equal footing, they keep up a lecturing attitude. For example E. v. Bülow in B. is advised of the fact that the article "labor colony" ("Arbeiterkolonien") is anything but ignored as the relevant information is subsumed under the article colonies of the poor ("Armenkolonie"). Reader v. M. in Neiße is politely reminded that it is beyond the task of *Meyers Konversationslexikon* to deal with the historical development of the different countries in addition to comments on the military, as the general interest is served better by a reliable account of the current situation. However, the reply carries on, abiding by his wish a short outline of the English military history is provided in the *Korrespondenzblatt* (zum sechsten Band 1886).

Notwithstanding the fact that most *Wikipedia* users do not get actively involved, the transition between authors and readers is fluid. The talk pages show examples where the active contributors try to put themselves in the shoes of the (passive) readers. For example Berlin-Jurist assumes that other readers, especially non biologists, would be interested in a passage on storage of potatoes (Wikipedia: Diskussion Kartoffel: Lagerung 2008) and in 2011 one author complains about the extensive use of scientific terminology "as if Wikipedia were a university reference work" (Wikipedia: Diskussion Kartoffel: Zu Fachspezifisch formu-

liert 2011). Although there is a certain amount of hierarchical behavior recogniza-ble among contributors – mainly derived from different degrees of personal com-mitment – the power relation between administrators, regular authors, occasional authors and readers is flat and transient. The version history and the talk pages reveal that parts of the article content may very well originate from personal eve-ryday experiences on behalf of the participating contributors. However, in the resulting article facts are always backed by published sources, although during the review process contributors often resort to commonplace information and every-day problems – like expertise from an acquainted potato farmer. The authors are bound together by the common goal of producing a trustworthy article worth read-ing and display a high degree of identification with the article. The results of the analysis coincide with Sundin's (2011) observation that the writing process often needed an external impulse (ambitious author, threat of change of status, discus-sion of certain facts) to trigger more structured epistemic work.

Conclusion

Not just since the rise of *Wikipedia* in the 21st century, readers have been shaping encyclopedias either by their critical remarks or their questions regarding "the organization" of the work. Already at the end of the 19th century, the editors of *Meyers Konversationslexikon* learned to appreciate letters to the editor as a way of communicating with their subscribers and welcomed it as a supplemental way to promote the encyclopedia and feed in current information. They explicitly ex-ploited the exchange of ideas with the audience as valuable incentive to improve the lexicographical principles such as the access structure of the encyclopedia as well as to eliminate factual mistakes. The critical remarks of the readers also served as an inducement to account for ideological as well as political positions advocated by *Meyers Konversationslexikon*. To determine to what degree *Wikipe-dia* and *Meyers Konversationslexikon* are part of the same encyclopedic tradition I finish with a hypothetical question. Which, if any, of the famous five pillars, the credo of *Wikipedians*, would readers and editors of *Meyers Konversationslexikon* have subscribed to?

1. *Wikipedia* is an encyclopedia

2. *Wikipedia* is written from a neutral point of view

3. *Wikipedia* is free content that anyone can edit, use, modify, and distrib-ute

4. Editors should treat each other with respect and civility

5. *Wikipedia* does not have firm rules (Wikipedia: Five Pillars 2013, No-vember 11)

From what we have seen before, it follows, presumably all of them, except the third one. While the readers sometimes probably wished to directly modify the content of the encyclopedia the editors vehemently defended their professional expertise and responsibility. In this respect they keep up the claim of a certain social and political guiding role of the encyclopedia. It is also likely that readers and editors of *Meyers Konversationslexikon* would have agreed that an encyclopedia should be written from a neutral point of view. Neutral was understood as more or less synonymous to the political position of the national-liberal political camp as a kind of mediating position between the opposing political camps. This comes with no surprise taking into consideration the social and political background at the end of the 19th century. The German Reich was a constitutional monarchy divided into fiercely opposing political and ideological camps namely national (or national and liberal), catholic and socialist (Wehler 1985). As we have seen, this understanding of the neutral point of view could result in a highly ideological argumentation. For *Wikipedians* adopting a neutral point of view means explaining major points of view, weighting them with respect to their prominence and characterizing information rather than debating it (Wikipedia: Five Pillars 2014). As could be seen in the talk pages, a policy that is based on a neutral point has to face constant inherent contradictions because in *Wikipedia* the neutral point of view results from a constant negotiation among the contributors. The transparency and openness of the editing process help to constrain the deployment of the neutral point of view argument in an ideological manner. This can also be interpreted as a strategy to neutralize political dissent in favor of the common purpose to produce an encyclopedia. Regarding pillar five, the absence of firm rules, although *Meyers Konversationslexikon* adheres to editorial principles, frequent deviations from a given structure occur. For example the actual coverage of an article depended to a high degree on the accessibility of material and information.

All three models of encyclopedic production mentioned by Reagle and Loveland (2013) (compulsive collection, stigmeric accumulation, corporate production) can be found in *Wikipedia*. The dominant model of *Meyers Konversationslexikon* is stigmeric accumulation. The *Korrespondenzblatt* as well as the "view in the workshop" illustrate that at least the informants and authors also worked under the imperative of compulsive collection. In their — sometimes justifying, however never apologetic — responses to the audience the editors take care to ensure their role as experts both regarding factual correctness and opinion leadership in political and academic (scientific) questions as well as proving their professional expertise as information specialists regarding the introduction of forward looking editorial principles. As opposed to this, administrators in *Wikipedia* strive to encourage participation and build expertise among the participating contributors. The high amount of "nitty gritty daily cleaning work and other small edits" compared to debating the actual content, Sundin (2011:20) observes in his

ethnographic study on *Wikipedia* is not limited to *Wikipedia*, but rather seems to be a general characteristic of the editing process of encyclopedias (Wie ein Konversationslexikon gemacht wird 1879: 771). The comparison shows that readers and editors in *Meyers Konversationslexikon* as well as *Wikipedia* contributors attach great importance to the process of verifying information through bibliographical references. In this respect, *Wikipedians* work in a constant contradiction, on the one hand exposing knowledge production to a permanent process of negotiating thereby challenging the role of experts, on the other hand relying severely on bibliographical authorities. Leaving aside the differences concerning the amount of reader contributions to the encyclopedia, the comparison of *Meyers Konversationslexikon* with *Wikipedia* confirms that the sine qua non for activating an upwards spiral of quality improvement is that readers feel responsible for "their" encyclopedia and learn, accept and cultivate common rules – including how to deal with dissent – and identify with the product at least so far as that they report errors. The case study could demonstrate that the compliance with Edward Blishen's request that an encyclopedia should always be shaped by its readers is indeed viewed as an important aspect of successful quality management by readers as well as editors.

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Notes

1. Wissenmedia, the current publisher of the German Brockhaus encyclopedia, which in recent years changed its publisher for several times announced in July 2013 the step-by-step cessation of the house-to-house distribution by mid 2014 and the closure of updating the online version by 2020 (Roesler-Graichen 2013).
2. It is an irony of history that the Bibliographisches Institut in 1984 merged with its former competitor F.A. Brockhaus of Wiesbaden to Bibliographisches Institut & F.A. Brockhaus AG (Keiderling 2005: 277).
3. It is an irony of history that the Bibliographisches Institut in 1984 merged with its former competitor F.A. Brockhaus of Wiesbaden to Bibliographisches Institut & F.A. Brockhaus AG (Keiderling 2005: 277).
4. In the German article Wikipedians the example of the history of the article on the Hermannstraße (Berlin) is given. Due to the commitment and personal involvement of 'normal' users the article developed from an entry that was initially suggested for deletion as it did not

meet the notability criteria into an article marked as excellent (Wikipedia: Wikipedianer 2014).

5   The choice also seemed natural to me as I used the example in my history of the genre of the popular encyclopedia in Germany and Great Britain in the 19th century (Spree 2000: 149-191).

6   The analysis is based on the online version of the fourth edition of Meyers Konversationslexikon 1885-1890 at retrobib (Meyers Konversationslexikon (1885-1890))

7   In the documented case study the collaboration process went always smoothly. The fact that Wikipedians over the last ten years have developed a sophisticated system for dispute resolution consisting of guidelines as well as formalized processes like third opinion, formal mediation and arbitration indicates that this is of course not always the case and that conflicts do happen (Wikipedia: Dispute resolution (2014), Reagle 2011: 45-137). Nevertheless, a study by Kim Osman on the talk pages of the article Australia very much coincides with the findings on the article potato. Osman describes the collaboration process as quite similar to traditional forms of quality control as a "generative friction, regulated by references to policy" (Osman 2013: 6).

8   Ultramontane signifies a person who places strong emphasis on the prerogatives and powers of the institution of the Catholic church and the Pope. (Conzemius 2002).

9   As entry date March 2007 is mentioned however the archive dates from 2006.

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The Free Encyclopaedia that *Anyone* can Edit: The Shifting Values of Wikipedia Editors

By Kim Osman

Abstract

Wikipedia is often held up as an example of the potential of the internet to foster open, free and non-commercial collaboration. However such discourses often conflate these values without recognising how they play out in reality in a peer-production community. As *Wikipedia* is evolving, it is an ideal time to examine these discourses and the tensions that exist between its initial ideals and the reality of commercial activity in the encyclopaedia. Through an analysis of three failed proposals to ban paid advocacy editing in the English language *Wikipedia*, this paper highlights the shift in values from the early editorial community that forked encyclopaedic content over the threat of commercialisation, to one that today values the freedom that allows anyone to edit the encyclopaedia.

Keywords: *Wikipedia*, encyclopaedias, encyclopaedism, mass collaboration, internet studies, grounded theory, online community.

Introduction

Wikipedia is an encyclopaedia in transition. Its core values are being called into question as an increasing number of users are paid to contribute to the encyclopaedia. How then is the open editorial community of this free encyclopaedia responding to the increasing presence of commercial interests and paid editors? Through an analysis of three failed proposals by the community to impose bans or limits on paid editing, this study reveals how the values of the English language *Wikipedia* editorial community are in transition and how these shifts reflect wider changes in assumptions about commerciality in digital media.

Throughout its history *Wikipedia*'s status as a non-commercial, non-profit, top web property among commercial counterparts has often seen it being praised for holding all the promises of an open and democratic web. In this discourse, debates about freedom, openness and non-commercialism often get conflated or neglected in favour of celebratory accounts of collaboration. However, it is important to recognise that there are different logics at work in each of these narratives and this paper aims to untangle the threads of freedom, neutrality and commercialism to investigate how ideals around the collaborative production of knowledge online are changing and how within *Wikipedia* there has been a shuffling of the community's values.

Once the threat of commercial activity in *Wikipedia* and the ability to derive a profit from the unpaid labour of others prompted a volunteer walk-out, known in *Wikipedia* folklore as the Spanish Fork. In response to suggestions in 2002 that *Wikipedia* may take advertising, Spanish language volunteers forked their content to other servers and started a new encyclopaedia (Lih 2009; Tkacz 2011). Now the presence of paid advocates – those editors who gain financial benefits from editing *Wikipedia* articles on another party's behalf – has drawn a public response from the Wikimedia Foundation, its then Executive Director Sue Gardner and founder Jimmy Wales (who has always been a vocal opponent of PR involvement in the encyclopaedia) (Wikipedia 2012; Roth 2013; Wikimedia Foundation 2013b). However, the community response has been divided. It is interesting to analyse these divisions, along with the involvement of different actors and groups in *Wikipedia* to see how paid advocacy has been constructed and how it reflects a separation of the values of openness and freedom and a shift away from the ideals of earlier contributors to the encyclopaedia. Indeed, as *Wikipedia* is reconfiguring its norms and values, this analysis reveals important truths about how the boundaries between the commercial and the non-profit in the context of peer production are sometimes fuzzy, overlapping and far from clearly defined.

An Experiment in Knowledge

Wikipedia started life as an online experiment, a side project, to build a free encyclopaedia, and one of the strongest ideological threads between *Wikipedia* and earlier encyclopaedic efforts based on Enlightenment ideals is the desire to make available the totality of knowledge. In *Wikipedia*, this ideal is expressed as providing access to the 'sum of all knowledge,' and this similarity between *Wikipedia* and earlier efforts has contributed to the experiment becoming an extremely successful global encyclopaedia (Wikipedia 2013d). Indeed as Benjamin Mako Hill found in his study of failed encyclopaedias, one of *Wikipedia*'s strengths is that despite being online, it still largely resembles a traditional encyclopaedia (Garber 2011).

However these encyclopaedias of the past have been of a momentary nature, taking 'snapshots' of information (Yeo 2001) at different points in time. On the other hand, *Wikipedia*, which is popularly criticised (Sanger 2006) for its information being unstable and transient, is perhaps the only encyclopaedia to aggregate these 'snapshots' to construct a history of a particular subject over time. As each edit is logged and timestamped, Haider and Sundin (2010) note that in *Wikipedia*, 'permanence has reached a new height…Everything is constantly changing at the same time as it is always being saved and stable, archived.'

Indeed, encyclopaedias are important in exemplifying the ideals of a period in history, of capturing intellectual consensus and establishing the knowledge of the time. These 'snapshots' provide an insight into the current ideals around free and open access to knowledge, and in *Wikipedia*'s case the potential of the web to be a forum for this knowledge. Ideals concerned with the greater social good are a historical feature of encyclopaedias as debates about property and copyright have played out since the early 18th century, just as they play out about commercialisation in *Wikipedia* today (Yeo 2001; Loveland & Reagle 2013). Analysing how *Wikipedia* has responded to paid editing can therefore reflect wider popular feeling about commercial activities on the web.

Untangling the Threads: Peer Production and Collaborative Knowledge Ideals in Reality

Events in the platform's history, such as the Spanish Fork, suggest that *Wikipedia* has long been opposed to commercial involvement and values its place as a neutral non-profit. As Wikimedia Foundation spokesperson Jay Walsh notes in relation to paid editing in the community, 'there's a historical resistance towards it from early days within the project' (Mullin 2014). Now however, the encyclopaedia is negotiating how to maintain its ideals in a web environment where commercial players inevitably want to be involved in producing content for a top six website (Alexa 2013). In order to examine what and how things are changing, we

must first look back at the ideals in question – freedom, neutrality, and commercialism – and how they have been conflated in imaginings of *Wikipedia* in utopian discourses of peer production.

The popular discourses (Benkler 2006; Leadbeater 2006; Tapscott & Williams 2006; Bruns 2008; Shirky 2008) around peer production, collaboration, prosumption and produsage normally invoke *Wikipedia* as a separate entity from market forces and portray its users as contributing due to a commitment to free and open knowledge. Attributing these motivations and ideals 'fits neatly with the long-standing rhetoric about the democratizing potential of the internet, and with the more recent enthusiasm for user-generated content (UGC) [and] amateur expertise' (Gillespie 2010: 352). Indeed *Wikipedia* is often situated as part of a gift, or sharing economy that operates differently to traditional market forces (Benkler 2006; Lessig 2008).

These narratives also suggest that one of the key aspects of peer production and co-creation is collaboration, where amateurs and/or volunteers work with traditionally commercial content producers in a mutually beneficial relationship. Indeed as Nathaniel Tkacz notes about these discourses, 'Collaboration is literally everywhere and can be attached to almost anything, immediately giving it a positive value' that is 'beyond that of simply co-labouring' (Tkacz 2010: 41-42). Tkacz (2010) also notes that there is a gap between popular and romanticised accounts of collaboration with how projects such as *Wikipedia* actually operate in an attempt to enact ideals (Kittur et al. 2007; Matei & Dobrescu 2010; Halfaker, Kittur & Riedl 2011; Laniado & Tasso 2011). This process of enacting ideals is ongoing and the encyclopaedia is in transition as both a knowledge producer and web platform. Tarleton Gillespie notes of web platforms:

> Like the television networks and trade publishers before them, they are increasingly facing questions about their responsibilities: to their users, to key constituencies who depend on the public discourse they host, and to broader notions of the public interest. (Gillespie 2010: 348)

Like other online platforms *Wikipedia* is a socio-technical construction that has evolved through a negotiation and formation of rules by the community. From its founding ideals *Wikipedia* has developed in a political context where ideals and principles scaffold the construction process (van Dijck 2013). This 'nonprofit, nonmarket business model that *Wikipedia* has chosen is inimically interwoven with the volunteer-based peer-production system the platform so successfully implemented' (van Dijck 2013: 148), and commercialism in this environment is consequently a controversial subject.

So while scholars like Benkler have given us a romantic view of *Wikipedia* as being based on peer production, on a system somehow apart from the commercial market, this is not in reality the case (Tkacz 2010). Websites are highly interconnected and this connected nature means that *Wikipedia* inevitably includes com-

mercial actors. Indeed, sustainability in this environment is linked to a platform's ability to integrate content across multiple places and spaces on the web (for example *Wikipedia*'s Facebook entries (Park 2010) and translation project with Google (Galvez 2010; van Dijck 2013).

Additionally, being conflated with other online platforms, being something other than an encyclopaedia, may reveal why *Wikipedia* is seen as open slather for so many marketing professionals. In using the term 'platform', which Gillespie (2010) points out is a politically charged term, we can see how it can be appropriated as a marketing 'platform,' or conflated with other 'platforms' that offer up marketing opportunities (such as YouTube, Facebook, Twitter), or indeed how *Wikipedia* may be packaged as part of a larger online media campaign. The difference is *Wikipedia* to many of its contributors and readers outside the PR sphere, is a platform for advocating the value of, and providing, free and open knowledge.

This is the fine line that *Wikipedia* straddles between an encyclopaedia and a platform, between an institution and a community. Where an encyclopaedia has an established tradition, a platform is still being negotiated. Whereas an institution is compromised of rules, a community is a more ad hoc assemblage where members can come and go freely, and it is in this context that *Wikipedia* is trying to negotiate the values associated with peer production and the creation of a volunteer-led online encyclopaedia, and what commercial involvement means for its future sustainability.

Wikipedia's Core Policies as an Expression of Ideals

Wikipedia's ideals are linked to its non-profit business model (van Dijck 2013), and as an organisation free from commercial pressures it is perceived as 'free' to create neutral and objective knowledge. Setting the conditions for what *Wikipedia* is and its core policies – its five pillars – reflect these ideals of freedom and openness.

Of *Wikipedia*'s five pillars, neutrality is arguably the most venerated (Greenstein & Zhu 2012; van Dijck 2013). It is the ideal to which editors aspire, a truly fair and representative article. While the possibility of this may be challenged by those editors who consider knowledge a social construction (Matei & Dobrescu 2010), it is still upheld as a core policy by most *Wikipedia* editors. And this ideal of the community to produce truly neutral, information is tested by the presence of paid advocates within the editorial community.

Advocacy by paid editors, in *Wikipedia*, is the antithesis of neutrality. The promotion of one position over another is seen as against the ideals of free and representative information. It would follow therefore that the community (which has been so good at constructing rules and norms in the past to regulate behaviour (Halfaker et al. 2012)) would want to create a policy to prevent such contribu-

tions. However the three proposals and associated votes to form such a policy all failed to achieve the support of the community. This is despite the Wikimedia Foundation (WMF) sending a cease and desist letter to the organisation found to be engaging in extensive paid editing that resulted in widespread media coverage (Wikimedia Foundation 2013a).

Such a move by the WMF, presumably not only in response to some sections of the editorial community, but also in response to the threat to their brand, shows that how *Wikipedia* is perceived (as a hub of neutral information) to groups outside of the editorial community is equally as important as how it is constructed by the community. In this discourse in the mainstream press, paid editing is being constructed as an issue that undermines the integrity of the encyclopaedia and is against its core operating principles of freedom and openness.

In order to preserve (or perpetuate the idea of) *Wikipedia*'s neutrality, Jimmy Wales has often called for a 'bright line' where PR professionals should never edit directly in article space, that is – any contributions they want to make or issues they want to raise should first be raised on the talk page of the relevant article an then escalated through existing channels, without ever editing any article content directly (Wikipedia 2012). In line with this, the UK's Chartered Institute for Public Relations has published the *Wikipedia Best Practice Guidance For Public Relations Professionals* that is based on Wikimedia UK's own draft guidelines (Chartered Institute of Public Relations 2012). However the response from some PR quarters to this approach is that it can be too slow and cooperation with editors can be difficult (Distaso 2012), leading to the conclusion that many professionals will indeed edit in article space.

The Case of Wiki-PR

A consulting business, Wiki-PR is behind one of the biggest covert editing efforts in *Wikipedia*'s history. Banned by the community after a community-led investigation and discovery of its activities, Wiki-PR claimed to have 12 000 clients and employ *Wikipedia* administrators as part of its operations (Owens 2013). Rather than going through the traditional channels and protocols that *Wikipedia* has established for editors with a conflict of interest (posting to the talk-page, requesting an article for creation), Wiki-PR used experienced editors familiar with the policies of the site and able to negotiate the rules and norms to ensure that the articles survived the creation process. Employees created 323 fake accounts, called sock puppets, to create and contribute to pages about clients. This large-scale astroturfing resulted in several hundred articles on *Wikipedia* that were largely promotional in nature, and that were removed following the investigation (Owens 2013).

However the legacy from such activity remains, not only in the widespread press accounts of Wiki-PR's actions, but in how *Wikipedia* has positioned itself in

response to the revelations of the extent of the sockpuppeting activity. At an institutional level, the WMF expressed concern that its brand and reputation as a non-profit site of independent knowledge had been damaged by Wiki-PR's activities:

> The Wikimedia community of volunteer writers, editors, photographers, and other contributors has built *Wikipedia* into the world's most popular encyclopaedia, with a reputation for transparency, objectivity, and lack of bias. When outside publicity firms and their agents conceal or misrepresent their identity by creating or allowing false, unauthorized or misleading user accounts, *Wikipedia*'s reputation is harmed. (Wikimedia Foundation 2013c)

This event therefore demonstrates the gap in English language *Wikipedia* between norms around commercial involvement and actual practices. For at a community level, the response has been less decisive, reflecting the shifting values of the *Wikipedia* community members as they engage in discussion to define and construct paid advocacy editing and its position in *Wikipedia*'s landscape of volunteers, paid editors and public relations professionals.

Methodology

In order to map the debates, I conducted a grounded analysis of the three main votes on paid editing conducted in the community in November 2013. These discussions formed one response to the Wiki-PR revelations and are a discrete object through which to analyse immediate user feeling in relation to a well-publicised event that challenges the encyclopaedia's ideals. It is theoretical sample, chosen to illuminate a specific response to a specific controversy rather than be a representative sample of the entire *Wikipedia* editorial community.

Using a Constructivist Grounded Theory (CGT) approach to the problem of mapping how the editorial community of *Wikipedia* is responding to the increasing presence of commercial interests and paid editors allows for new themes to emerge through the coding process that may not be reflected in dominant responses from other places. Grounded Theory works well when applied to online discussions such as these as it allows for quickly 'gaining a clear focus on what is happening in your data without sacrificing the detail of enacted scenes' (Charmaz 2006: 14). Kathy Charmaz notes that, 'like a camera with many lenses, first you view a broad sweep of the landscape. Subsequently, you change your lens several times to bring scenes closer and closer into view' (Charmaz 2006: 14). Such a close reading of all three votes revealed divisions in the community about supporting measures to limit or ban paid editing as proposed. However it also revealed the justifications offered by editors in the conversations often aligned as editors seek to negotiate what paid editing actually *is*.

As mentioned above, the institutional response from Jimmy Wales, Sue Gardner and the WMF was definite in its opposition to paid advocacy editing, reflecting the assumption, based on past actions that the community is against such in-

volvement. However in favouring an open approach to the coding the data using CGT methods, a more nuanced response from the community emerged from the conversations, one that did not necessarily always fall in line with the institutional reaction.

CGT therefore offers insight into how the ideals of *Wikipedia* are changing as the internet changes around it. In describing these debates, the study reveals the tensions that compromise paid advocacy editing and how *Wikipedia*'s founding principles are interpreted by those who edit the encyclopaedia a little over a decade later. As Geert Lovink (2011: 1) points out, 'The participatory crowds suddenly find themselves in a situation full of tension and conflict,' and these situations can reveal much about how platforms and collaborative projects are evolving.

Three Proposals

The three proposals analysed here are 'No paid advocacy' (NPA), 'Paid editing policy proposal' (PEPP) and 'Conflict of interest limit' (COIL) (Wikipedia 2013b; Wikipedia 2013c; Wikipedia 2013a). The three discussions and votes were carried out on English language *Wikipedia* in November 2013 in response to the Wiki-PR controversy. Remaining open to all possible understandings of the data, I undertook a four-stage coding process to 'separate, sort, and synthesize these data through qualitative coding ...[and]...emphasise what is happening in the scene' (Charmaz 2006: 3). Overall, 573 posts were analysed in the study. The first stage consisted of an initial round of coding where each response was coded as a support, oppose or comment along with short description of the post. In a second close reading both the posts and the descriptor and a list of key words was formed. In the third stage the key words were refined to a set of categories, and then finally each post was assigned relevant category tags. In total there were 21 categories to emerge from the discussion, ten that opposed the formation of a policy, nine that supported a new policy and two that were neutral (for example where votes either supported or opposed the policy, but called for a clarification of the policy wording).

There was a relatively large number of participants with 300 individual contributors to the discussions and proposals regarding paid editing on *Wikipedia*. Among the three conversations NPA was the largest vote and involved 256 individual participants contributing 408 posts, PEPP had 86 participants contributing 242 posts and COIL was the smallest discussion with 43 participants contributing 74 posts.

All three discussions were linked by an 'infobox' on each page stating that, 'In November 2013, there were three main discussions and votes on paid editing' along with a link to the other two discussions (Wikipedia 2013b). 22% of users

contributed across these different discussion spaces, 16% who participated in two of the conversations about the proposals and only 6% contributed across all three discussions. Additionally in the collaborative tradition of the few doing the most, a small number of users contributed heavily to the discussions. In NPA the ten most frequent commenters contributed 16.9% of the posts, while in PEPP and COIL, the top ten contributed 49.2% and 51.4% of all posts respectively (although this was often just short replies to votes, rather than involved discussions among users).

'We are at the Barricades'

The first, and most obvious result is that all three proposals failed. Despite much debate and discussion across a variety of spaces both on-wiki and off, and the swift formation of the policy proposals, all three failed to garner enough support via the votes to effectively ban paid advocacy editors by way of a formal written policy. It became apparent in analysing the discussions that 'free' does not necessarily correlate with 'free from commercial interests' and that remaining open to contributions from all editors, paid, volunteer or somewhere in between, is more important than creating more regulatory mechanisms to assist in the production of quality, neutral content. Therefore one of the major themes to emerge from the analysis was that editors felt existing policies in *Wikipedia* already cover the issues raised by paid advocacy editing, the two most cited being *neutrality* and *notability*. Neutrality is expressed as an impartial point of view where articles are written from a fair and representative position (Wikipedia 2014b). Notability guidelines outline the criteria under which a topic is considered significant enough to have an article in the encyclopaedia (Wikipedia 2013e). The most common response from users to the proposals reasoned that the application of these existing policies would weed out the edits made by someone with a conflict of interest, and an additional policy is not necessary.

> Further, advocacy of any sort as a motive doesn't really address edit quality. Only application of existing Wikipedia guidelines does that.

> One of the issues here is our incredibly low notability standards….Sorry, but I think we need to clean up our own act before we create policies that will be used primarily to gain advantage against opponents in ideologically-based editing. (Wikipedia 2013b)

The alternative view from supporters of the proposed policies, is that an explicit, new rule is needed. One that specifically bans paid advocacy editing so that a message is sent to editors that this type of commercial activity is not welcome in the encyclopaedia. Supporters maintain that traditional non-profit organisations are required to have policies on conflicts of interest and *Wikipedia* should be no different.

> Wikipedia needs a clear, written policy on financial COI [conflict of interest], like every other major non-profit. We owe it to to [sic] ourselves, and to the public that trusts us, to get this done.
>
> I don't want to explain to my grandkids (if I ever have some) that I stood by and watched while this great experiment of our [sic] was inundated by a tsunami of commercialism. We are at the barricades, let us not back down. You have to decide if I am crying WOLF or, is the wolf at the door, here, now. (Wikipedia 2013b)

While some participants outlined their support of such a policy because paid editing is against the ideals of *Wikipedia*, another group of editors opposed such a policy saying that preventing paid editors violates *Wikipedia*'s core premise – that it is the encyclopaedia that *anyone* can edit.

> Be clear and honest here, this policy change won't eliminate paid editing and COI, it will hide it. It's a deterrent to honesty and a line right through the Wikipedia slogan 'The encyclopaedia that anyone can edit'. Thanks
>
> …and yes as always the original foundation of wikipedia remains 'Welcome to Wikipedia, the free encyclopedia that **anyone** can edit.'
>
> If it is principles that you want I would start with, 'If it ain't broke don't fix it', followed by not eroding the two basic principles of 'Attack content not editors' and 'The encyclopedia that anyone can edit'. (Wikipedia 2013b)

The last quote raises an interesting point, and one put forth by a number of editors who discussed the norm of focusing on the quality of edits as opposed to the type of editor making contributions. This reason was often given in conjunction with an oppose vote to the formation of the proposed policy, also citing existing policy as being sufficient to address the issue of paid editing.

> We have policies and guidelines for how articles should be written and developed. We have built up the project to focus on the content not the contributors. (Wikipedia 2013b)

This was a recurring theme among users, that a fair and accurate encyclopaedia article can be achieved by addressing the quality of the edits, not the people contributing the content. There was also the view among editors that such a policy would be unenforceable and create extra work for already over-burdened volunteers who would be required police it.

> Unenforceable. Waste of time and resources. Creates more problems that [sic] it solves. It is impossible to eliminate paid editing, so we might as well accept it and try to regulate it as best we can. (Wikipedia 2013b)

Highlighting the gap between institutional and community response only one editor referenced *Wikipedia*'s reputation in the discussions, which the Wikimedia Foundation cited as a reason to cease and desist in its letter to Wiki-PR. Also, only one comment called for institutional involvement in this issue, suggesting that overall the community sees this as an issue it can manage itself.

Another challenge to forming an explicit policy against paid advocacy editing is that the community is still not clear about what *constitutes* paid editing. It can

be taken to mean anything from a museum employee updating information about an artefact in their collection, or a funded graduate student contributing in their area of expertise to paid professionals who are editing for a third party to advocate a particular point of view.

> Also, no one anywhere on this project has ever clearly defined the differences between 'paid editing' and 'paid advocacy', and until definitions exist then discussions probably cannot proceed. The working definition is that 'paid advocacy' is 'paid editing' which does not comply with Wikipedia community guidelines. All discussions on this topic make no sense to anyone outside this movement because advocacy in the Wiktionary sense of the term has nothing to do with its use in this small community on Wikipedia. (Wikipedia 2013b)

What constitutes a conflict of interest, and indeed what threat editors with conflicts of interest pose to the encyclopaedia is still very much up for discussion in the community. It demonstrates a shuffling of values among different editors as to the place of commercial players in the *Wikipedia* ecology. Interestingly where commercial involvement was once viewed by the community as being in direct opposition to *Wikipedia*'s core values (and this rhetoric is repeated at an institutional level) and should be prevented, some community members now accept the presence of paid professionals and are resigned to their presence in the encyclopaedia.

> Dishonest paid editors will do it anyway, so why punish the honest ones? Or drive them to dishonesty?
>
> We can strongly discourage paid editing but not ban it. We should try to work with the COI editors to develop a lasting relationship, not declare all out war. (Wikipedia 2013b)

There are therefore values more important to the community than whether or not an editor is being paid, and these relate to the encyclopaedia's existing standards of notability, verifiability and most importantly neutrality. Participants expressed the need to differentiate between the different types of paid editing and that as long as the editorial pillars of *Wikipedia* are held up, the issue of whether or not someone has a commercial interest in editing *Wikipedia* is secondary to them holding up these ideals.

Conclusion

'*Wikipedia* is the flagship of peer production and the most celebrated open content project' (Tkacz 2010). It is the free encyclopaedia that *anyone* can edit and this ideal is valued by *Wikipedia* contributors over and above remaining free from commercial activity. The reality that *Wikipedia* is no longer (if indeed it ever was) free from commercial involvement, is one that many editors are resigned to. Rather than take an ideological stance against paid editing like the Spanish Fork,

editors are willing to find ways to mange it based on existing ideals of neutrality and openness.

While debates continue to play out in the English language *Wikipedia* about paid editing, in other language versions, working arrangements have been reached with those editors who are paid to write for the encyclopaedia. In the German language encyclopaedia (which is the third largest version behind English and Dutch) companies can edit through a verified account (Wikipedia 2014a). Similarly advocates for paid editing from Wikimedia France welcome the input of corporate editors as they see it as improving articles that would otherwise languish and to keep information relevant and up-to-date (Wikimania 2013).

In line with this more open approach from other *Wikipedias*, the English language *Wikipedia* community is responding to the increasing presence of commercial interests and paid editors by favouring the ideals of openness and neutrality over freedom from commercial involvement. It is looking at ways of defining and regulating this involvement, but not in any way that would impede the ability of *anyone* to edit.

For the popular discourses about peer production that hold *Wikipedia* up as an ideal of free, open, volunteer-led, non-commercial activity, no longer hold in an environment where companies will want a presence on one of the world's most popular websites. And while the Wikimedia Foundation and founder Jimmy Wales are drawing bright lines around paid advocacy editing, the *Wikipedia* editorial community is taking steps to manage commercial involvement by looking at the variations of paid editing as they 'seek to strike a balance between stability and open-ended flexibility' (Coleman 2013: 208).

English language *Wikipedia* editors are still negotiating and constructing paid editing. Indeed as the nature of the web is changing and commercial activity is more overtly evident across other platforms, some editors seemed resigned to commercial activity in the encyclopaedia (Song & Wildman 2013). The question is then not how to prevent commercial involvement from paid editors (such as through the policy proposals discussed), but how to manage it. In reconfiguring their values from earlier editorial communities, editors are reflecting the changing nature of the web and separating out the values of openness, freedom and non-commercialism into a workable model that upholds the central ideals of neutral and objective information in an encyclopaedia that *anyone* can edit.

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Crowdsourcing Knowledge
Interdiscursive Flows from *Wikipedia* into Scholarly Research

By Simon Lindgren

Abstract

Information increasingly flows from smart online knowledge systems, based on 'collective intelligence', and to the more traditional form of knowledge production that takes place within academia. Looking specifically at the case of *Wikipedia*, and at how it is employed in scholarly research, this study contributes new knowledge about the potential role of user-generated information in science and innovation. This is done using a dataset collected from the Scopus research database, which is processed with a combination of bibliometric techniques and qualitative analysis. Results show that there has been a significant increase in the use of *Wikipedia* as a reference within all areas of science and scholarship. *Wikipedia* is used to a larger extent within areas like Computer Science, Mathematics, Social Sciences and Arts and Humanities, than in Natural Sciences, Medicine and Psychology. *Wikipedia* is used as a source for a variety of knowledge and information as a replacement for traditional reference works. A thematic qualitative analysis showed that *Wikipedia* knowledge is recontextualised in different ways when it is incorporated into scholarly discourse. In general, one can identify two forms of framing where one is unmodalised, and the other is modalised. The unmodalised uses include referring to *Wikipedia* as a complement or example, as a repository, and as an unproblematic source of information. The modalised use is characterised by the invocation of various markers that emphasise – in different ways – that *Wikipedia* can not be automatically trusted. It has not yet achieved full legitimacy as a source.

Keywords: *Wikipedia*, collective intelligence, academia, encyclopaedias, citations

Introduction

This article analyses how information flows from so-called smart online knowledge systems – based on 'collective intelligence' (Lévy 1999) – and how this compares to the more traditional form of knowledge production that takes place within academia. Looking specifically at the case of *Wikipedia* and how it is employed in scholarly research, this study contributes to new knowledge about the potential role of user-generated information in science and innovation. The notion of collective intelligence is based on the idea that no single person knows everything but everyone knows something, and this collective knowledge can be harnessed through social media. People networking and sharing knowledge, experience and ideas results in a form of intelligence that, according to Lévy, is universally distributed, coordinated in real time, and constantly enhanced. This leads to an effective mobilisation of skills.

Modern digital culture makes all of us potential members of a shared virtual universe of knowledge, and the common fostering of this intelligence has the potential to make social ties the most important currency in future society. Collective intelligence, Lévy argues, can disrupt the power of government and can lead to a diversification of knowledge and creativity. Lévy argues that we will increasingly witness the development of skill zones that are 'fluid, delocalised, based on the singularities, and agitated by permanent molecular movements of association and rivalry' (Lévy 1999:5). The utopian result will be a form of real-time democracy where knowledge is no longer 'padlocked like a treasure' but instead 'pervades everything, is distributed, mediatised, spreads innovation wherever it is found' (Lévy 1999:212). This emerging knowledge system – 'the cosmopedia' – makes available 'to the collective intellect all of the pertinent knowledge available to it at a given moment, but it also serves as a site of collective discussion, negotiation, and development' (Lévy 1999: 217).

Other researchers have also pointed out similar processes of networked, non-profit, and democratised knowledge production, including Rouse's (1991) notion of 'media circuits' as adapted by Lange (2008), Jones' (1997) concept of 'virtual settlements', Wenger's (1998) idea of 'communities of practice', and Gee's (2005) construct of 'affinity spaces'. Some of these are conceptualisations of how the 'fluid skill zones' are formed and structured, while others provide a terminology for the collaborative activities going on within them once they have been established. This conceptual redundancy – and there are certainly more terms to be found in the literature – is symptomatic of the field. A significant amount of effort has been made to name processes and patterns of online connection and engagement. It is natural for a wide array of conceptualisations to emerge in relation to new processes, and an attempt to bring the variety of overlapping theories together is needed.

Aim and Questions

While it is obvious that ICTs have the potential to dramatically transform processes of knowledge production, it is not clear how and to what extent this potential is realised. More research of real-world situations is needed. In this article, I investigate how and under what circumstances the potential that is inherent in ICT environments based on collective intelligence is, or is not, harnessed by traditional systems of knowledge production. This is done through a case study of *Wikipedia* and its relationship to the established scientific literature. Although – a user-generated online encyclopaedia that anyone can edit or contribute to – is an interesting object of study in its own right (Rosenzweig 2006; Kittur, Suh, Pendleton & Chi 2007; Fallis 2008; G. W. Lovink & Tkacz 2011; Sumi, Yasseri, Rung, Kornai & Kertész 2011), the main focus here is on the actual interaction between these types of bottom-up knowledge systems and traditional and established forms of knowledge systems. A unique dataset collected from the *Scopus* research database and processed with a combination of bibliometric techniques and qualitative analysis was used to address the following issues in quantitative terms:

1. To what extent are *Wikipedia* articles used as references in peer-reviewed academic research?
2. In which academic disciplines is *Wikipedia* most commonly used?
3. What types of *Wikipedia* articles are referenced?

After this general mapping, quantitative analysis was used to address the question of how knowledge that comes from *Wikipedia* is incorporated in academic discourses. This final and important question relates to the ways in which *Wikipedia* is used and whether or not it provides a contribution to scientific efforts that would not have been possible without a connection to collective intelligence. The overarching question has to do with whether the knowledge that can potentially flow from the social ICT platform to the academic community can be construed as merely listed information – stripped of inspiring or clarifying power – or as a powerful form of active information that can deepen and enrich the new context in which it is incorporated.

Wikipedia as a Source

One of the key characteristics of the current media landscape is the increased ability for users to create content of their own. Instead of a clear-cut division between producers and consumers, there is an increasing number of examples of 'prosumption' (Toffler 1980) and 'produsage' (Bruns 2008) as networked publics (Varnelis 2008) engage in participatory cultures (Jenkins 2006). As the cost and complexity of producing and circulating information has gone down following the development of so-called Web 2.0 technologies (Bell 2009), a much larger number of people have become involved in various forms of content creation compared to

just a few years ago. The crucial premise for much of the optimistic discourse surrounding this development (cf. Shirky 2008) is that the aggregated individual contributions will benefit the collective. As argued by Madden and Fox (2006), the new bottom-up forms can 'replace the authoritative heft of traditional institutions with the surging wisdom of crowds'.

Wikipedia can be defined in terms of what Rheingold wrote in 1994 about 'virtual communities'. It is based on the 'power of cooperation' and 'a merger of knowledge capital, social capital, and communion'. Such communities attract 'colonies of enthusiasts' because the digital platforms enable them 'to do things with each other in new ways, and to do altogether new kinds of things' (Rheingold 1994: xxi). A key aspect of this is the development and application of collective intelligence. Power, according to Lévy, 'is now conferred through the optimal management of knowledge whether it involves technology, science, communication, or our 'ethical' relationship with the other' (Lévy 1999: 1).

User-generated content appears in a variety of forms that range from the mere pooling or aggregation of information (e.g. collaborative filtering on sites like Amazon.com) to different broadcast models (*Twitter* or blogs) to interactive spaces (discussion forums or other types of collaborative platforms) (Flanagin & Metzger 2011). An important venue for such collectively produced information and knowledge is online encyclopaedias, of which *Wikipedia* is the prime example. Established in 2001, this openly editable encyclopaedia can 'rightfully claim to be the most successful example of online commons-based and oriented peer production' (O'Neil 2011: 309). As O'Neil claims, *Wikipedia* can be considered to be a mass project that has taken on several features of 'hacker' culture, the most prominent of which is the idea that management structures should be decentralised.

Wikipedia is, as of January 2014, the 6th most visited site online (Alexa 2014) and has increasingly become an accepted source of information that is quoted online as well as in court cases, traditional media, and popular literature (Langlois & Elmer 2009). It is also increasingly referred to in academic books and papers.

This development has led to a debate over *Wikipedia's* trustworthiness and validity. Through its model of peer-production (Benkler 2006), it aspires to produce neutral points of view (http://en.wikipedia.org/wiki/Wikipedia:Neutral_point_of_view). The use of open source software and content further underscores *Wikipedia's* attempt to exist as a forum for the creation and circulation of knowledge and information that is outside of the capitalist mode of production. Langlois and Elmer (2009: 775) argue that because it 'relies on a collaborative process to produce knowledge rather than the credentials of experts, the *Wikipedia* model puts into question traditional processes for legitimizing truth claims, such as relying on expert knowledge rather than the wisdom of the crowd.'

While *Wikipedia's* collaborative model for knowledge production through the use of a multitude of anonymous contributors has been praised, the same model has also been criticised and questioned. Researchers have repeatedly shown that a small core of dedicated individuals, rather than the alleged crowd of participants, has produced and controlled much of the content, especially during the first five years of *Wikipedia's* existence (Niederer & van Dijck 2010). Because various groups of users have distinctly different levels of permission to edit content, the site has never been the 'mythical egalitarian space' (ibid.: 1384) that it is often described as. Graham (2011: 271) argues that *Wikipedia* is marked by 'uneven geographies, uneven directions, and uneven politics' and states that:

The Wikipedia project has had unimaginable success in making freely provided information available to potentially anyone. However, the project is less successful in showing users where the gaps in representation lie. Part of this problem can be traced to the wording of Wikipedia's Neutral Point of View (NPOV) policy. The policy advises editors to 'assert facts, including facts about opinions – but [not to] assert the opinions themselves'. While this rule may function as an effective policy for many articles (e.g., fish anatomy, coliform bacteria, or Manchester City Football Club), it does not necessar[ily] work for articles about place. The countless ways of interpreting economic, social and political landscapes mean that articles that contribute to the palimpsests of place necessarily must only represent selective aspects of place in selective ways (ibid.: 279).
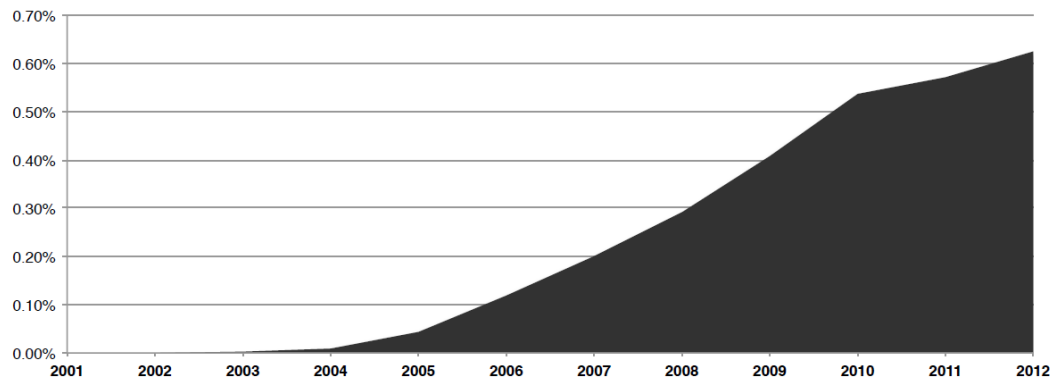
In addition to this, the credibility and reliability of *Wikipedia* has also been scrutinized. Francke and Sundin (2012), for example, have shown how on-going discussions about the credibility of participatory media are changing notions of what sources are suitable to use. Flanagin and Metzger (2011) have argued that many users are still not ready to leave traditional models of acquiring knowledge behind and that many people, especially those of older generations, still value expert-generated content more than its user-generated counterpart. Biddix et al. (2011), and studies referred to therein, have shown that college students often use *Wikipedia* as a key tool for their research process, but the site is also increasingly used as a source of reference material in academic research.

Wikipedia in Academia: General Mapping

For the purpose of this study, a dataset was created consisting of around 13 000 journal articles collected from the Scopus bibliographic database. The entire database – covering 19 500 journal titles from 5 000 different publishers – was queried for papers with the author '*Wikipedia*' cited in their reference lists. In order to exclude articles about *Wikipedia* itself from the dataset, papers with '*Wikipedia*' in their title, abstract, or keyword field were filtered out. A search was made for each year from 2003 to 2011, and key data about frequencies, research disciplines, and research areas were entered into a spreadsheet. While caution is required
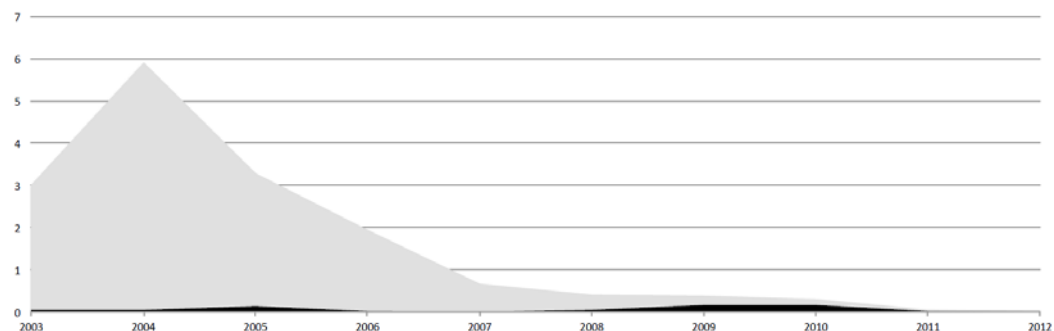
when interpreting results from such small numbers, a steady increase in the use of *Wikipedia* as a reference can be seen. In all scientific areas, only one indexed paper per year included *Wikipedia* in its reference list in 2001 and 2002. As *Wikipedia* turned five years old in 2006, 1 445 articles per year referenced material from the site, and five years later in 2011 this number had increased to more than 9 000. Figure 1 shows the percentages of papers per year in *Scopus* with one or more references to *Wikipedia*.

Figure 1. Percentage of papers per year in Scopus with one or more reference to Wikipedia.

The occurrence of references to *Wikipedia* in scholarly research raises questions about how the collaborative knowledge building that takes place on this relatively open platform 'co-evolves' (Kimmerle et al. 2010) with the knowledge building that is going on within more traditional structures in academia. Langlois and Elmer (2009) have suggested that more research is needed on how the content on *Wikipedia* is circulated within, and incorporated into, other settings and how such appropriations might change the role of such content. Figure 2 shows a comparison of the annual increase (%) in the share of papers citing *Wikipedia* (grey), with the annual increase in the share of papers citing any other encyclopaedia (black). While the pattern has been levelling out in recent years, the increase in *Wikipedia* citations was quite dramatic between 2003 -2007.

Figure 2. Annual increase (%) in share of papers citing Wikipedia (grey) compared to annual increase in share of papers citing any other encyclopaedia (black)

The next question to be addressed concerns in which academic disciplines *Wikipedia* is most commonly used. Figure 3 shows the percentages of papers within every subject area in the Scopus database that make one or more references to *Wikipedia*. This excludes, once again, articles that have *Wikipedia* itself as their subject matter. The general impression, which must be considered in relation to the increase in *Wikipedia* references illustrated in Figure 1, is that articles that cite *Wikipedia* are still in a clear minority ranging from around 1 to 8 out of every 1 000 articles within the respective fields of research. In Figure 3, traditionally positivist sciences (Natural Sciences, Medicine, etc.) display the lowest degree of *Wikipedia* citations while more interpretive areas like Social Science and Arts and Humanities tend to be found at the other end of the spectrum. Mathematics and its sub-field Decision Sciences rely heavily on looking up theorems and equations that are abundant and easily accessed on *Wikipedia*, thus these fields have a relatively high occurrence of *Wikipedia* citations.

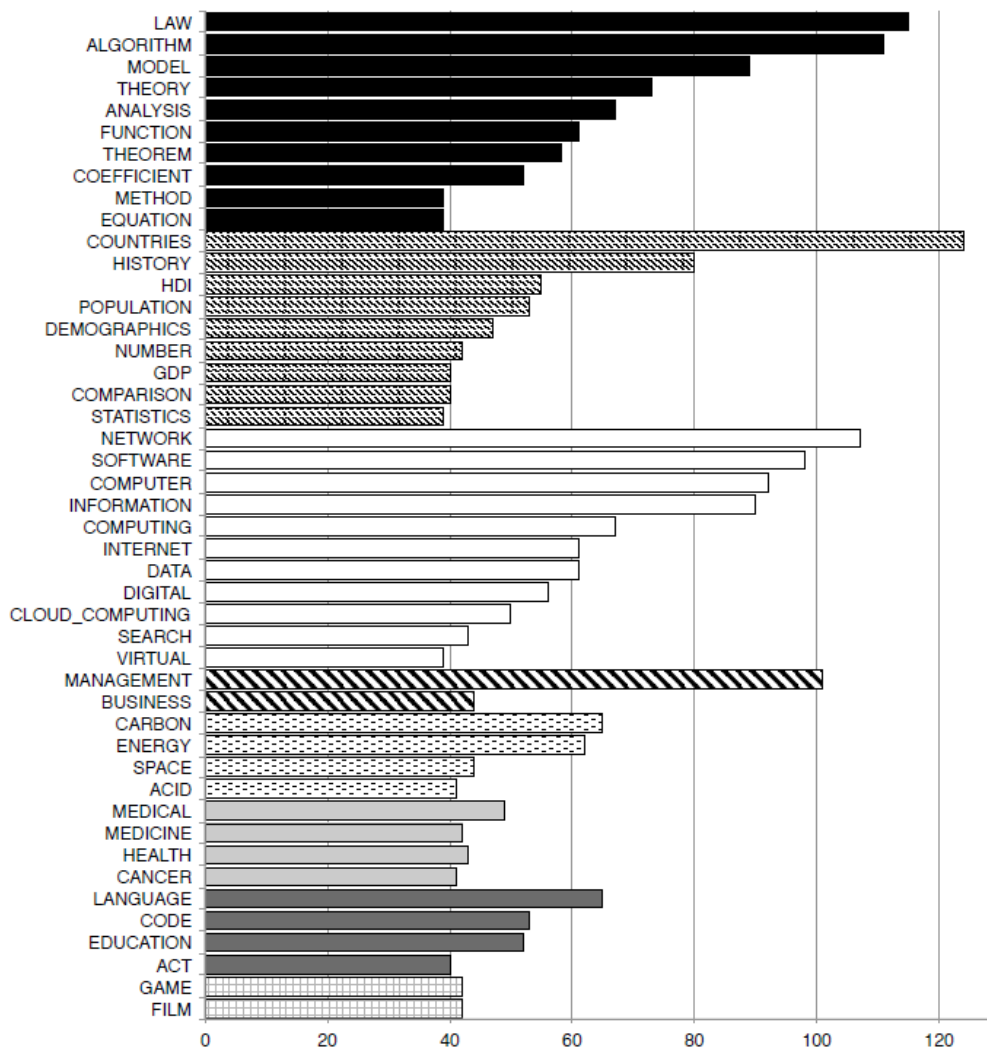Figure 3. Percentage of Scopus entries citing Wikipedia within indexed subject areas

Computer Science sits at the far left of Figure 3 with 8 of every 1 000 articles citing *Wikipedia*. We can only speculate about the reason for this, but one reasonable explanation would be that this discipline, like Mathematics and Decision Sciences, builds on certain forms of knowledge – of hardware, coding languages, software, and technologies – that is sometimes better covered in *Wikipedia* than by traditional encyclopaedias. Another possible explanation could be that acceptance for looking up information on *Wikipedia* might be higher among scholars and reviewers within this inherently digital field of inquiry.

Turning to the question of what types of *Wikipedia* articles tend to be cited, the *Wikipedia* references in all articles were extracted. This was done by using regex filtering to produce a raw text list including nothing but the actual titles of cited *Wikipedia* articles. This list was then analysed using WordStat (Péladeau 2003). With this content analysis software, a list of standard English stop words were removed after which a stemming algorithm was applied to standardize the list of entries. The results of a straightforward frequency count on the resulting list, as

visualized in Figure 4, show the most often occurring words in the titles of all articles citing *Wikipedia*. The categories that come to the fore largely reflect the most represented fields (cf. Figure 3), for example, terms from Computer Science and Mathematics citations are similar to those from citations in the field of Business and Management and so on. Looking closer at the words in this context provides more information about what lies behind the different bars in the figure. The bars have been grouped and colour coded based on a rough qualitative thematisation, and this gives a somewhat more structured image of the cited articles even though the categories are not clear-cut.

Figure 4. Top words in cited Wikipedia articles

The black at the top of the graph primarily represents the relatively large number of references to articles with words like 'law', 'algorithm', 'theorem', 'coefficient', and 'equation' in their titles. Examples of frequent *Wikipedia* articles are

'Moore's law', 'Zipf's law', 'Metcalfe's law', 'Genetic algorithm', 'Greedy algorithm', 'Dijkstra's algorithm', 'Central limit theorem', 'Dominated convergence theorem', 'Spearman's rank correlation coefficient', and 'Hill equation'. This further strengthens the conclusion that *Wikipedia* tends to be used in disciplines like Mathematics and Decision Sciences for looking up and making reference to various types of principles and postulates. The third set of bars from the top, marked in white, illustrates that this type of citation behaviour extends into the field of Computer Science where top articles include 'Mobile ad hoc network', 'List of social software', and 'Cloud computing'.

The second section from the top, marked with diagonal stripes, illustrates that *Wikipedia* also seems to be employed in academic research for obtaining updated data on nations, populations, and demographics. The articles on GDP (Gross Domestic Product) and HDI (Human Development Index) are often consulted as are articles like 'List of countries by income equality', 'List of countries by military expenditures', 'List of countries by population density', and so on. In the graph as a whole, other themes that stand out are 'Management', with top articles such as 'Knowledge management' and 'Database management', as well as 'Language' with entries on 'Business execution language' and 'Swahili language' being among the most often cited. The other rough categories are Business and Management (bold diagonal stripes), Biology, Chemistry, Physics (dotted), Medicine (light grey), Media (latticed), and Miscellaneous (dark grey). All in all, this overview shows that *Wikipedia* tends to be used in academic research as a complement to, and sometimes as a replacement for, other reference works. This is especially true when it comes to current statistics because *Wikipedia* has the advantage of being constantly updated.

Wikipedia and Interdiscursivity

A key question in this article has to do with how knowledge gathered from *Wikipedia* is incorporated into academic discourse – what Latour (1987: 35) calls 'the context of citation'. This relates to the idea of interdiscursive flows, and in this case this refers to currents of discourse from a platform for user-generated content (*Wikipedia*) into a traditional context for knowledge production (scholarly research). Interdiscursive relationships are, in fact, one of the key themes in discourse studies. Assuming the social constructionist standpoint that reality can be represented in different ways entails recognising that connections between different discourses must be taken into account. Fairclough (2003: 124) writes:

> [D]ifferent discourses are one element of the relationship between different people – they may complement one another, compete with one another, one can dominate others, and so forth.

This article uses this perspective to study the points of intersection between *Wikipedia* discourse and scholarly discourse by identifying and analysing these inter-

sections in a sample of academic journal articles. What is of interest here is not the respective discourses as such, but rather the crossing points between the discourses (cf. Bjerke 2008).

The scholarly understandings that are conveyed through research papers are, in essence, a combination of elements from a number of specialised discourses that can be defined on the basis of authorship, discipline, type of source, etc. When the authors of a paper analyse their data, these discourses are brought together – they are articulated (Laclau & Mouffe 1985) – in various ways. This has to do with what Kristeva (1980) called 'intertextuality' or what Bachtin (1981) called 'dialogism'. Texts are rendered meaningful through their interdiscursive relationships with other texts. They draw on them, refer to them, contest them, assume that the reader knows them, and so on (Bachtin 1986: 69). After performing the general mapping, as outlined in research questions 1 through 3 above, the fourth research question addressed in this article revolves around analysing how *Wikipedia* cuts into scholarly discourse.

The first step is the identification of those points where *Wikipedia* enters scholarly discourse by being called upon in peer-reviewed and published research papers. These are cases of 'direct intertextuality' (Fairclough 2003: 49; Leech & Short 2007). The analysis of these points of intersection will be taken further in a second step where the incorporation of knowledge from *Wikipedia* in the research articles is studied. This tells us how the 'imported' elements (Bjerke 2008: 7) are framed in their new context. A key concept is 'recontextualisation', which is a term from educational sociology (Bernstein 1990) that has been taken up by discourse analysis (e.g. Fairclough 2003: 33). The notion of recontextualisation highlights the fact that intertextuality always involves some sort of transformation of meanings. When a formulation, an idea, or a concept is taken out of one discursive context and put into another, certain 'adjustments' need to be made in order for the piece of content to become meaningful in the new setting:

> [I]ntertextuality is a matter of recontextualization – a movement from one context to another, entailing particular transformations consequent upon how the material that is moved, recontextualized, figures within that new context (ibid.: 51).

In this article, the recontextualisations are analysed qualitatively by focusing on how knowledge from *Wikipedia* is introduced and packaged in the scholarly texts. Particular attention is paid to what Fairclough calls 'framing'. This has to do with the choices that are made about how to frame the voice of one text as it is incorporated into another.

The Framing of *Wikipedia* Knowledge in Academic Articles

Turning to the analysis of recontextualisations, a qualitative text analysis was performed on 1,799 articles. This sample included 4% of all peer-reviewed journal articles citing *Wikipedia* within each subject area indexed in Scopus. This thresh-

old was set quite roughly in order to select a reasonably sized portion of the dataset for qualitative analysis. For areas where 4% of the articles exceeded 200, the first 200 articles (sorted by 'Relevance', as defined in Scopus) were analysed.

The analysis entailed doing batch searches in the *TextWrangler* application (www.barebones.com/products/textwrangler/) to find those places in the articles where *Wikipedia* was mentioned and then reading and thematising these passages (Braun & Clarke 2006). The text segments were coded and gradually brought together into a thematic structure that ended up including the following four types of recontextualisation: (1) as a complement or example, (2) as a repository, (3) as an uncommented incorporation, or (4) as a modalised incorporation.

The first identified way of referring to *Wikipedia* articles is in the form of complementary information or examples. In these cases, pointers to various *Wikipedia* articles are included and framed as 'extra' information that goes outside of the regular references to other types of literature. This use of *Wikipedia* is illustrated in the following excerpts from research papers:

> 1.
> Lazin, Lauren (2003): Tupac: Resurrection. Paramount; see also Wikipedia 2007, s. v. Nigger (http://en.wikipedia.org/wiki/Nigger#Nigga).

> 2.
> Tryon's several language counts – 105, 110, 113 – have subsequently been cited by many authors of published and, nowadays, online overviews of Vanuatu. Wikipedia's Vanuatu, for example, has 113 languages (Wikipedia nd); the CIA's Factbook has ''more than 100''; and Ethnologue lists 110

> 3.
> For details about this, as well as further information on TV Guide's history, see the entry 'TV Guide' from Wikipedia (2006).

> 4.
> 'Open source development' is a term that was first coined in the world of software development for software whose source code was publicly available, and thus software that anyone could modify and then contribute back to the community. For more on this topic, please see: http://en.wikipedia.org/wiki/Open source software

Excerpt number 1 is an example of a case where *Wikipedia* is used in a complementary fashion alongside another reference (in this case a movie) and framed using the wording 'see also'. Similar use is illustrated in excerpt number 2 where a reference to *Wikipedia* is packaged together with other sources covering the same issue as one example among many of a certain type of knowledge. Excerpts 3 and 4 also express a related type of framing where, in both cases, *Wikipedia* entries are suggested as sources of further background information on a particular topic. Taken together, this category consists of examples in which citations of *Wikipedia* articles are used to provide additional information or knowledge in relation to the core frame of reference of the research paper in question. Related to this recontextualisation strategy, but a bit different, is the use of *Wikipedia* by

linking to it or pointing to it as a kind of a repository. This framing invokes the site as an online archive where useful bits and pieces of information are stored, hosted, and made accessible for reference. The following excerpts are examples of this:

> 5.
> Reverend Martin Niemoller's (1946) words:
> First they came for the communists,
> and I did not speak out because I was not a communist.
> Then they came for the trade unionists,
> and I did not speak out because I was not a trade unionist.
> Then they came for the Jews,
> and I did not speak out because I was not a Jew.
> Then they came for me and there was no one left to speak out.
>
> Niemoller, M. (1946). First they came. Retrieved on January 6, 2010, from http://en.wikipedia.org=wiki=First_they_came
>
> 6.
> A critical mass of two-dimensional (2D) bar code users has recently emerged in Japan and it can be said that these 2D bar codes (see them illustrated in Wikipedia, 2007a) have enabled connections to be made between the mobile phone and publishing industries (see Fig. 2).
>
> 7.
> Another map (see Wikipedia 2006) divides the country into two regions – Jesusland and the United States of Canada.
>
> 8.
> Gray H. The nephron. In: Anatomy of the Human Body. Philadelphia: Lea & Febiger, 1918. http://en.wikipedia.org/wiki/File :Gray1128.png. Accessed February 2, 2009.

Excerpt number 5 refers to *Wikipedia* as a place where a famous quotation can be revisited, and excerpt number 6 points the reader to the online encyclopaedia in order to be able to see illustrations of (in this case) bar codes. Excerpt 7 refers to a map that is to be found on *Wikipedia*, and number 8 recommends *Wikipedia* as the source for looking at an image originally available in a printed book. The common denominator for this form of recontextualisation is that rather than pointing to other available – and more traditional – sources for these things, the authors have opted to make reference to *Wikipedia*. The third way of framing *Wikipedia* articles within academic publications is represented by an absence of explicit recontextualisation. In these cases, an uncommented reference is made to the encyclopaedia according to the standard conventions of scholarly writing. The following set of excerpts illustrate this:

> 9.
> Shariah covers not only religious ritual, but also many aspects of day-to-day life, politics, economics, banking, business or contract law, and social issues (*Wikipedia*, 2005).

10.
The Bermuda triangle is a region in the Atlantic Ocean where some aircrafts and surface vessels have disappeared. Flight 19 is the designation of five American fighters which disappeared in this triangle on December 9, 1945 (Wikipedia 2008).

11.
The shallowness of the focus and the density of population greatly increased the severity of the earthquake (Wikipedia 2008).

12.
(C)riminals have historically used churches and temples as a hiding place in times of trouble (Wikipedia, 2008).

13.
Courier 1B, built by Philco, also launched in 1960, was the world's first active repeater satellite (Wikipedia, n.d.)

In addition to these three more or less straightforward ways of recontextualising *Wikipedia* knowledge in academic articles, the fourth identified type of framing involves various modalisations. In critical discourse analysis, modality refers to the relationship between the author and what they write. In functional grammar, modality 'construes a region of uncertainty' (Halliday & Matthiessen 2004: 116) and it reflects the position of a speaker or writer in relation to what they say (Hodge & Kress 1988). By using certain 'markers of modalisation', an author or speaker to varying degrees commits to, or expresses affinity with, the information given. By looking at markers of modality in relation to how *Wikipedia* is referred to in scholarly papers, one can analyse with what level of assertion authors put forth these citations. In the thematic analysis, two levels of modalisation were coded with regard to the degree of modalisation. The following extracts are examples of a softer form:

14.
The concept of remix can refer to both material practices and ideas. Often associated exclusively with popular culture, as noted in Wikipedia, it is often understood as a 'hybridizing' practice in music

15.
The Wikipedia entry for Unconferences is also a worthwhile resource as is the blog site on unconferences (www.unconference.net)

16.
A recent Wikipedia entry reports that Christianity and Islam are the two largest religions in the world, with 2.1 billion and 1.5 billion followers, respectively (Wikipedia 2008).

17.
In fact, Wikipedia maintains a list of free and paid statistical software (List of Statistical Packages, n.d.).

18.
Since the boom of 'Web 2.0' early this century, Social Networking Sites have been on the rise. As of November 2009, Wikipedia lists 167 of them.

The distinguishing feature for this type of framing, as opposed to the previously discussed type, is that it explicitly says something about *Wikipedia* in the sentence where the citation is made. Excerpt number 14 makes it clear that the information referred to is 'noted in *Wikipedia*', number 15 states that *Wikipedia* provides a resource that is 'worthwhile', and excerpt 16 notes that the presented statistics come from a 'recent *Wikipedia* entry'. Furthermore, extract 17 says that *Wikipedia* 'in fact' maintains the list used and number 18 emphasises that the number of social networking sites listed are 'as of November 2009 [on] *Wikipedia'*. While this soft modalisation constitutes no essential difference compared to the more straightforward way of recontextualising knowledge from the online encyclopaedia, there is another type of framing that represents a harder form of modalisation:

> 19.
> In contrast to the other serials described, this series was very popular, <u>at least according to a web-based source</u> (Wikipedia [nd]), the producer (Tabloid Jelita/Dv/Idh [nd]) and some of my neighbors in Semarang where I recorded this show while carrying out fieldwork.

> 20.
> <u>Those who preside over</u> the Drizzt Wikipedia page have written how 'Salvatore uses Drizzt to represent issues of racial prejudice' (Drizzt, n.d.). Drizzt has somehow rejected his evil nature but is often judged as evil.

> 21.
> <u>Wikipedia, written and edited collaboratively by volunteer authors in the general public</u>, provides a peek at the lay perception of library history. <u>The online article</u> for Public Libraries claims, 'The origins of the public library as a social institution have not been well explored or recorded. The institution may have been inspired by the libraries of European universities, which in turn attempted to imitate research libraries in antiquity.'

> 22.
> We used the 'List of Smart Card' directory in Wikipedia (2008) to identify relevant cases. <u>We believe this list to be comprehensive and accurate for two reasons</u>. First, we have followed smart card development over the past few years, and all the major initiatives that we are aware of are included. Second, <u>we used alternative search methods</u> (e.g., Google searches, and industry magazine listings) to identify <u>possible missing cases</u> and no additional cases were added.

This type of framing entails the use of different markers of modality that, in various ways, represent the above-mentioned 'region of uncertainty'. The underlined sections of excerpts 19 through 22 explicitly show the degree of affinity authors have with the statements they are making. A common pattern in the majority of cases where this framing is used for recontextualising *Wikipedia* knowledge in scholarly discourse is connected to the issues of the credibility and legitimacy of the site. Excerpt number 19, for example, modalises the reference to *Wikipedia* by stating that 'at least according to' this source the point in question can be made. Obviously, this wording presumes that other more certain or reliable sources exist, the use of which would not require this type of modalisation.

Excerpt 20 emphasises the form of agency underlying *Wikipedia*. The author(s) do not simply refer to the entry in question, but also make it clear that this knowledge comes from 'those who preside over' this page. This framing entails a modalisation that would be much less expected if the information were coming from, say, *Encyclopedia Britannica* or any other source that is more established. By making it clear that *Wikipedia* entries are 'written' by a group 'presiding over' certain areas of knowledge, the author(s) modalise their reference to the site by implying that other things might have been 'written' if other people were 'presiding' over the entry. This is, of course, also the case with a source such as *Encyclopaedia Britannica*, but this is less likely to be explicitly stated when referring to such sources. A similar recontextualisation is illustrated in excerpt 21 where a reference to a *Wikipedia* article is not only modalised as being an 'online article', but the author(s) of the research article also make it clear that the site is 'written and edited by volunteer authors' and that it can, therefore, be said to 'provide a peek at the lay perception' of the topic. While other encyclopaedias also provide 'peeks' at certain 'perceptions' of the world, the stronger legitimacy of these sources makes it less likely that references to them would be modalised in this way. Conversely, the use of these modalisations indicates that *Wikipedia* tends to be seen as a less reliable and potentially more biased source of information than many others. This impression is further strengthened by the observation that authors sometimes feel the need – as illustrated in excerpt 22 – to motivate why knowledge and information coming from *Wikipedia* can be 'believed' to be 'comprehensive and accurate'. It is possible that the inclusions of these motivations are sometimes the product of requests from peer reviewers who are sceptical about *Wikipedia* as a source of information.

Conclusion

This article has analysed how content is moving from today's much celebrated smart online knowledge systems – based on the wisdom of crowds (Surowiecki 2004) – into established processes of knowledge production. The case that has been highlighted here is the use of *Wikipedia* as a source of material in scholarly research papers. Beyond the hype of social media, actual studies such as the one presented here are needed to better understand the development of this phenomenon. Without this type of knowledge, we would be left with what Lovink (2002: 10) fittingly calls 'vapor theory'. Assessing the actual circumstances under which crowdsourced knowledge benefits scholarly research can contribute to a better understanding of the potential role of user-generated information in science and innovation.
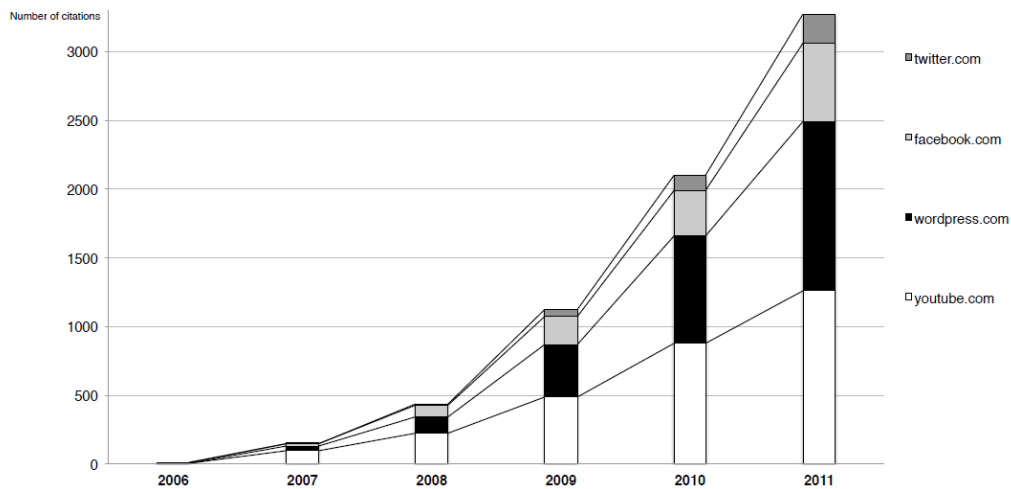
The empirical analysis presented in this article has shown that there has been an increase in the use of *Wikipedia* as a reference within all areas of science and scholarship. This development is clearly illustrated with the data from the *Scopus*

database showing that 14 papers cited *Wikipedia* in 2003, around 1,500 cited *Wikipedia* in 2006, and over 9,000 cited *Wikipedia* in 2011. It was further shown that *Wikipedia* is used to a larger extent within subject areas like Computer Science, Mathematics, Social Sciences, and Arts and Humanities than in the Natural Sciences, Medicine, and Psychology. *Wikipedia* is used as a source for a variety of knowledge and information and as a replacement for traditional reference works.

The thematic and qualitative analysis presented here showed that *Wikipedia* knowledge is recontextualised in different ways when it is incorporated into scholarly discourse. In general, one can identify both unmodalised and modalised forms of framing *Wikipedia* citations. The unmodalised uses include referring to *Wikipedia* as a complement, as an example, as a repository, and as an unproblematic source of information. The modalised use is characterised by the use of various markers that emphasise in different ways that *Wikipedia* cannot be automatically trusted. It is said to be 'web-based', 'online', and founded on a type of authorship that differs from the traditional form. Authors using a modalised framing appear to feel obligated to motivate why they have chosen to cite *Wikipedia*. This illustrates the following key conclusion of this study: *Wikipedia* is increasingly used as a reference in scholarly research, but it has not yet achieved full legitimacy as a primary source. Traditionally positivist sciences use it less than interpretive disciplines, and those citing it sometimes feel the need – or might have been urged – to explain why they have chosen *Wikipedia* rather than other sources. Looking at the modalisations used, it seems that the biggest issues with the site are the fact that it is 'online' and that its collective and volunteer authorship might lead it express 'lay' rather than 'professional' perceptions and might make it prone to bias when only some groups 'preside' over certain pages.

The increased use of crowdsourced knowledge for academic references is not limited to *Wikipedia*. Figure 5 provides an overview of the occurrence of the micro-blogging platform *Twitter* (launched in 2006), the social network site *Facebook* (launched in 2004), the social video site *YouTube* (launched in 2005), and the blogging platform *WordPress* (launched in 2003) in *Scopus* reference lists since 2006. This figure excludes articles that discuss or analyse these services in particular or social media in general. Even though the absolute numbers are still small, the increase is obvious.

Figure 5. "Collective intelligence" site URLs in Scopus reference lists

These services, when used as sources of information and knowledge, can – like *Wikipedia* – be seen as platforms for crowdsourced knowledge. But in the cases of Twitter, Facebook, *WordPress*, and YouTube we are also dealing with potentially less structured and more diverse forms of content. As academia gradually embraces the wisdom of crowds – as enabled by collective intelligence through social content platforms – the ways in which this wisdom is used will have to be negotiated within the scholarly community. As this study of *Wikipedia* – maybe the most popular collaborative online platform – shows, the use of collective intelligence sources has not changed scholarly citation practices to any significant degree. The use of these sources is still marginal, and the ways in which they are used suggest that they are only incorporated in ways that sit well with established traditions for scholarly citations. The future will present two challenges. First, scholars will have to find ways to maintain rigour in the face of increasingly diverse sources of knowledge. Second, the academic community will have to find ways to benefit from the wisdom of crowds without being discouraged by the open and vernacular nature of such wisdom.

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Store Norske Leksikon: Defining a New Role for an Edited Encyclopaedia

Field report by Georg Kjøll & Anne Marit Godal

Transparency in Production

Store norske leksikon (SNL) [Great Norwegian Encyclopaedia] is an edited, online encyclopaedia that strives towards radical transparency. Our aim is for as many parts of text production as possible to be visible to everyone, much like in the model that *Wikipedia* has pioneered. Unlike *Wikipedia*, however, contributors to *SNL* are required to use their full name, and encouraged to supply biographies that explain their background and qualifications within a field or topic.

In *SNL*, it being an edited work, not all contributions by the public are published directly. Before a user's article suggestion or proposed edit goes live online, it has to be assessed by one of the editors. But unlike a traditional encyclopaedia model, where everything had to pass through a central editorial board, *SNL* use assigned and vetted 'department editors' (in Norwegian: fagansvarlige), who submit content directly onto the web page, with editors reviewing submissions *post factum*. This gives readers access to a greater chunk of the publication process, providing insights into the workings behind creating the online encyclopaedia.

The revision history is easily accessible on every article page, and we are working towards developing a system that clearly shows who is behind which edits, and who has supplied which bits of texts. Combined with the requirement on contributors using their full name, this gives the reader greater opportunity to critically assess the content, and question the authority of the text.

We want to play into the hands of people who have constructive criticism and relevant objections to the text the encyclopaedia contains. Articles contain a comment section under the actual article content, and readers are encouraged to submit article changes directly into the text, prompting the editors to change or defend the content.

Greater Responsibility

Combining an emphasis on interaction with the public with the requirement on signed content, the experts who contribute to the encyclopaedia are made responsible for the work they produce. This sets *SNL* apart from traditional general knowledge encyclopaedias, where the majority of articles are unsigned, and direct interaction with the authors was all but impossible. But it also highlights a key difference between *SNL* and *Wikipedia*, where the responsibility behind a given article rests on an ineffable quantity: the greater, often nameless or pseudonymous, public that have contributed to that article.

The idea of maintaining an updated, general knowledge encyclopaedia in the internet age, where important events happen and are covered very fast, and information is available to with online access at the stroke of a key, strikes many as a Sisyphean task. We are aware of the massive challenge such a task presents, especially since we started out as recent as in 2011, working with a base of content that mostly stemmed from a paper encyclopaedia published between 2005 and 2007.

To deal with this task in the best way possible, we have adopted two strategies: 1) using the tools of the internet, such as social media and reader analytics, to pinpoint content that needs our attention, and 2) create articles that are concise yet accessible, about a limited range of subjects, with an eye towards what types of content are missing from other parts of the web.

Monitoring Reader Behaviour

With a daily readership of up to 145 000 people, the articles in *SNL* are discussed not only on our own web site. Through the monitoring of e.g. *Twitter*, *Facebook* and news sites, the encyclopaedia's editors learn of mentions of and debates around our articles that take place on the wider web. This helps us understand what content people are interested in, what they like about a particular article, where we should have an article we don't, or where we have an article that is weak or out-dated.

Though most of the editor's work is long-term and systematic, it's important for us to keep an eye on what the public are saying, engaging directly with our readers. Any content that people tell us needs improving, we review as quickly as we can.

Part of the same strategy is the monitoring and predicting of reader activity on our site. Using *Google Analytics*, we prioritise the articles that have performed well over time, encouraging each new department editor to start out with her field's most popular articles. In addition, we try to find content that has fewer hits than it should have, and look at variables such as exit rate and average time on page to identify which articles do not read well.

Following the news and keeping track of the calendar also helps in this regard. If an important national holiday, such as Christmas, is coming up, we can predict that people will want to read about Christmas. If a celebrity has died of a rare disease, we can be sure that the readers will want to read about that disease in *SNL*.

Relevance of Content, Accessibility of Form

Despite the fact that some encyclopaedias have and have had as their goal to amass and/or disseminate the sum of human knowledge, not all facts and phenomena are relevant for all encyclopaedias. While the English language *Wikipedia* contains substantial entries on

every single episode of the *Simpsons*, achieving this amount of coverage is not a viable goal for an edited encyclopaedia with a user base of 5 million people.

Not all species of animals merit an article in *SNL*, and we cannot reference every published author, touring musician or working architect. Consequently, we work with relatively specific guidelines on what should be considered relevant, with only people, places, phenomena and events that hold a special cultural or historical significance being prioritized. We're conscious, however, of our catering to a Norwegian audience, and maintain a focus on what's important in the national public sphere.

Our position as a national, Norwegian language project together with our publication model, also contribute greatly to the actual form of our articles. The quantity of information on the internet is vast and ever-expanding, and an advanced, linguistically skilled searcher has access to a goldmine of knowledge from every corner of the web. But most people use *Google*, or a similar type of all-purpose search engine, when they look for information. And few of these people rarely go beyond the first page, or even the first number, of hits when looking for an answer to a specific question. It is therefore important that there are open and accessible sources available for this type of use case.

Significantly, even though many Norwegians are competent users of English, finding information in one's mother tongue is part of what it means for information to be accessible.

Helping Readers Digest the Web

The quantity of information now available through web search is both a powerful resource and a stumbling block for the average searcher. *Googling* 'pregnancy' (or the Norwegian equivalent 'graviditet') will yield a massive number of info sites, news, blogs and forums that has pregnancy as its primary topic. While this can be incredible helpful for people interested in the topic, it can also

be overwhelming and hard to process. Often, what people need is someone who can digest a given, complex topic for them, helping to make sense of what is written and said about something that concerns them. Our vision is for *SNL* to occupy such a role.

Accessibility, by way of being a web site that's open, free to use, highly ranked in search engines and in a not too advanced Norwegian, is one key to achieving such a vision. For a lot of content, *concision* is another.

For all the strengths of the wiki model of writing, what is often lacking from *Wikipedia* articles on important topics, is restraint. Many people coming together contributing with facts, helping telling a story, will often lead to an amassment of text. An editorial publishing model is able to practice concision more easily, since there will be one or two people who can determine the overall direction of a given entry, cutting down and leaving out bits, in order to better get the facts across.

Being able to say the important things, define a field and present key facts in a little amount of time and space, is a virtue, no matter the genre of text. A very large group of our readers end up on snl.no while *googling* something on their cell phone, wanting to check a fact

or understand a difficult word, or figure out if a particular health issue might be serious or not. These people want their answers fast, without having to select among a thousand hits, and scroll through pages of text.

SNL wishes to help people navigate the web, and we form the content so that people can seek out and find the gist of an issue quickly. Where there are entries about complex phenomena and events, where the facts are not clear or determined, we want to supply solid, well-grounded analyses.

In our view, a modern encyclopaedia should take into account the cultural and technological context in which it finds itself, and actively use the possibilities that the internet presents. At the same time, it should strive to understand what its role with regards to both technology and society is.

SNL started anew, with a fresh editorial board, a mere three years ago. We are a young organisation, which learns new things about our own product and our readers every day. But we have built the encyclopaedia on a very clear and solid foundation, and we see that what we have to offer is needed and wanted, even though the internet sometimes can give the false impression of being a very crowded place.

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Wikipedia

A Field Report by Lennart Guldbrandsson

Introduction

Above my desk is a quote by Albert Einstein: "Do not worry about your difficulties in mathematics; I can assure you that mine are still greater." One of Einstein's problems, of course, was that since he was a pioneer, there were not many who could give him the correct answers.

Wikipedia is in some ways in the same position. It is presently the 6th most visited website in the world (Alexa 2014), it is the only donor-supported website in the top 50 list, and *Mozilla* is the only other non-profit in the top 25 list (Gardner 2013). Few other very large websites use only copyright-free material, written and maintained by anyone, with a decision system that has been described as consensus-driven. Even the five-year strategic plan for the *Wikimedia Foundation* was crowd-sourced (Wikimedia 2011b).

It is in this light, the challenges and plans for the future of *Wikipedia* should be viewed. Very few other web site owners, or even encyclopaedias, are in the same situation, with the same business model, or government system. For sure, there are some similarities with for instance traditional encyclopaedias or with social media. In common with the former is the tone of the language and overall goal. With social media, *Wikipedia* shares an increase in use on mobile and tablets. However, this means very little when it comes to *Wikipedia's* challenges and plans for the future.

I will exemplify this with one challenge and one plan for the future.

The Gendergap Challenge

During my nine years as a contributor to *Wikipedia*, there has been an increase in almost all possible measures of quality. When I started in 2005, the Swedish-language *Wikipedia*, where I am mostly active, had around 60 000 articles, while the English-language *Wikipedia* had about 450 000 articles. Reference sections as well as images were not plentiful, to say the least. There were no schools that used *Wikipedia* as a teaching tool, and no museums put their images on *Wikipedia*. Media reports were few and often negative.

Through diligent work of several thousands of volunteers, all this changed: the number of articles is more than 20 times they were in 2005 for the Swedish-language *Wikipedia*, and 10 times more for the English-language *Wikipedia*. References to scholarly works as well as other reputable sources have become a standard. Images of increasingly higher quality are inserted into more and more articles. Partly this is due to collaborations with galleries, libraries, archives and museums around the world (Wikimedia 2014a). Many universities and places of higher education use *Wikipedia*, either as an examination form, or as a way to work with outreach to the lay community (Wikimedia 2013). Media reporting have also begun to change, albeit more slowly.

There have, naturally, also come up new measures of quality that were not on the map in 2005. The largest, by far, is the result of a series of surveys carried out around 2008-2010, most famously one by UNU-MERIT, which showed that only 13% of the editors of *Wikipedia* were female (Glott et al. 2009).[1] This has led to a series of discussions on and near *Wikipedia* as well in the media, mainly about what the consequences and remedies might be. Wikipedians, including me, have started to focus on recruiting more female editors, through several initiatives. So-called "edit-a-thons" with a focus on female participants or what is generally considered to be female-oriented topics, are probably the most

common initiative. Another good example is the on-*Wikipedia* initiative, *The Teahouse* (English-Language Wikipedia 2014). Since 2013, interest in using statistics to determine the best methods for recruiting female editors has increased, not least with a view to getting women to continue contributing to *Wikipedia*. Recruiting people from all-female or predominantly female groups have also meant that common discussion topics and solutions to their problems enter the *Wikipedia* community.

However, this has also meant getting veteran Wikipedians to question themselves on how and why they started contributing to *Wikipedia*. The answers have been varied, but true altruism and an unwillingness to let one of the internet's most used sources for information contain errors, are two of the most common answers.

The challenge is far from over. Admittedly somewhat anecdotally, topics that are generally considered to be more interesting for women, still have worse articles than comparable subjects for men.[2] Both *The Teahouse* project and the Education Program have been drawing more interest from females than from males, which point to a small but gradual increase in female editors (Wikimedia 2014b; El-Sharbaty 2013). As long as the majority of the most active Wikipedians are male, the gendergap issue is difficult to resolve (Hale 2014).

However, there are still no major surveys to tell whether the numbers are changing or not. Even if there were, there may still be problems detecting any changes in surveying the *Wikipedia* community. First, the UNU-MERIT survey was shown to have been skewed (Hill & Shaw 2013). Secondly, many female editors prefer to stay anonymous, in fear of sexual harassments, degrading comments about women, and other repercussions (Gardner 2011). The discussions on *Wikipedia* are torn between positive and indifferent, but information about the gendergap and prominent Wikipedians speaking out about it, has

in my experience made at least made some more volunteers support the issue.

My own estimation of this issue is that it may take some time to reverse the common misconceptions that experts are male, that contributing to *Wikipedia* is hard, and that you need to be an expert to contribute to *Wikipedia*. This is part of a cultural shift that not only exists on Wikipedia. A further examination of this topic can be found, in Swedish, on *Wikimedia Sverige's* blog: http://wikimediasverige.wordpress.com/kvinnor-pa-wikipedia/).

The Redesign Plans

I have in other forums compared governing *Wikipedia* to steering an oil tanker. Every turn needs to be done in small steps. One of the most long-standing (if not well-known) examples is a series of proposals to re-design *Wikipedia*. Today, most of *Wikipedia* is white and grey, with thin blue lines as dividers between sections. The present look of *Wikipedia* was created around 2003-2004, when there were very few mobile phone users, and the internet in general looked quite different. Since then, only incremental changes have been made. (To be clear, I am not discussing the function here, with WYSIWYG-editing capabilities and so on, but the look and feel of the website.)

There have been some suggestions to totally redesign *Wikipedia*. Perhaps the most serious attempt began as a series of user interface tests circa 2010 (Wikimedia 2011a). It was discovered that most test subjects, who had never edited *Wikipedia* before, found the layout confusing and the workflow unintuitive. Compared with other websites, such as *Facebook*, the design appears antiquated and cluttered. A change to attract new users seemed inevitable.

However, with the consensus model, all large changes need to be discussed before implementation.[3] In the case of the redesigns, the results of the surveys were largely ignored by the veteran Wikipedians, who had already learned to

navigate through the maze. Since it was mostly veteran Wikipedians discussing the issue, it became the consensus to keep the existing design.

New designs continue to be discussed. *Wikimedia Foundation's* senior designer, Brandon Harris, has shown many interesting-looking tests and cases (Mediawiki 2014). The plans are there, and they would in some cases seriously help newcomers to understand and to be active on *Wikipedia*. While some of them have been implemented, there are some difficulties trying to lead the *Wikipedia* community through fiat or even by showing a good case. The results are not always what you would expect.

Why is this important? *Wikipedia* still mainly reaches countries in the US and Western Europe. In the rest of the world, mobile users and newcomers are the default. For them, a redesign is a necessary step in the on-ramp to editing. Here the consensus of the veterans stands in the way of an easy experience.

The changes are happening, as the veteran Wikipedians become more and more intermixed with newcomers in the discussions. In my experience, it takes a few years of lobbying inside the *Wikipedia* community to change attitudes, but there are exceptions, as we are beginning to see with the gendergap issue.

Conclusion

Many Wikipedians describe the experience of contributing to *Wikipedia* as a fulfilling hobby. However, the majority of Wikipedians tend to focus only on the articles they work on, and care very little for the large trends and challenges ahead. This is not only a weakness, though. The Wikipedians interested in the gendergap issue and the Wikipedians interested in redesigning the website are often more invested in their respective fields, and have more patience in proposing and re-proposing the necessary changes. This is especially true as more interested people from outside *Wikipedia* engage with the veteran Wikipedians.

So while Einstein's quote may be fitting, it is not entirely true. Some solutions come from within the community, and some from without (newcomers and experts), but some come from the meeting of the two.

Notes

[1] The survey website seems to have been shut down, but I have endeavoured to link to as much of the results as I could find in the list of references.

[2] This is indeed the topic of many media reports on the gendergap, including by *Digital Trends*, *The Huffington Post* and *The New York Times*. See reference list.

[3] There have been a very small number of incidents through the years, where the *Wikimedia Foundation* has acted before/without community input. The policy has almost always been that it is up to the respective language version communities. The most famous example is the Anti-SOPA protest, which included an open discussion between more than a thousand volunteers and the *Wikimedia Foundation* legal team.

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Land of 10,000 Facts: Minnesota's New Digital Encyclopedia

Field Report by Molly Huber

MNopedia is the recently created, born digital encyclopedia of the state of Minnesota. It is a project of the Minnesota Historical Society (MNHS), the state's leading cultural heritage institution and one of the largest and oldest historical societies in the nation. The MNHS has been in existence since 1849 and tells the story of Minnesota's past through exhibitions, extensive libraries and collections, twenty-six historic sites, educational programs, book publishing, and both financial and in-kind assistance to county and local historical societies throughout the state. It provides a strong base for an encyclopedia to grow from.

MNopedia is unusual in being the product of a single organization. Most comparable encyclopedias are joint projects between local cultural organizations, sometimes a historical society, but also universities, humanities councils, state archives and the like. The MNHS has been able to fund the project so far with money available from Minnesota's Arts and Cultural Heritage Fund, a special statewide fund established in 2008 by taxpayers to create new initiatives, projects that organizations would not be able to fund on their own. An encyclopedia seemed like a fitting and worthy project, something that would benefit Minnesotans statewide, and enrich their understanding of their shared heritage.

The decision to create a born-digital encyclopedia was a reflection of new technologies available. Although the idea of a print encyclopedia for Minnesota had been kicked around before, it had never been realized, so there was not a pre-existing text to work from, as is the case with many online encyclopedias. As this project was getting off the ground, print seemed increasingly irrelevant, however, with the popularity of resources like *Wikipedia* and the vast changes in how people look for and obtain information. The planning team

wanted *MNopedia* to be easily accessible from a variety of platforms. Just as important, the team wanted it to be easily updatable, and to engage the audience directly.

MNopedia began in February 2010. We took a year to plan, both content and structure, before starting to build. To get an idea of what others were already doing, we conducted a comparative review of other United States and international encyclopedia efforts, both print and digital. The *MNopedia* team was assisted in this review by the Roy Rosenzweig Center for History and New Media (CHNM) based in Washington DC. They were chosen as a partner because of their knowledge of the field. The first half of 2010 was spent on this review and in building a conceptual model of best practices. The *MNopedia* team connected with the Internet Digital Encyclopedia Alliance (IDEA) during the planning process as well because of their work defining common encyclopedia standards. IDEA is an affinity group of the American Association of State and Local History (AASLH), consisting of AASLH staff and staff from digital encyclopedias throughout the United States. The group received a National Endowment for the Humanities (NEH) grant to create a white paper outlining best practices for the growing field of digital encyclopedias, which was published in 2012. In starting our project later than some of the others, we benefitted from their experience.

During our planning process, a great deal of serious thought was given to content and content development. An encyclopedia is a vehicle to communicate information, and content is our main product, which can be delivered in different ways. Our website, mnopedia.org, is the primary delivery method and only one so far, but the content was designed to be portable and we may add

other platforms as we grow and develop. Thinking about it from this perspective, we wanted to create a carefully curated, authoritative resource that was nevertheless vibrant and engaging, building upon the MNHS's reputation as a respected historical organization whose work can be trusted.

At the same time, the team wanted to capture some of the community engagement seen around resources such as *Wikipedia* and similar projects. We purposefully connected with wikipedians involved in the GLAM (Galleries, Libraries, Archives and Museums) initiative to see where we might learn from them and where we might be a source of good information that could later be disseminated to *Wikipedia's* global audience. This was part of the reason that all of our content created in-house, and the majority of it overall, is licensed under Creative Commons Attribution ShareAlike 3.0 Unported (CC by SA), making it easily shareable from a copyright perspective. We also built in the ability to comment on every article, set up a discussion forum where readers could answer our questions or propose some of their own, and encouraged site visitors to contact us directly. We also established a social media presence on Twitter and Facebook, with the links prominently displayed on the site.

To present the content, we created rich entry packages, going beyond text to include multimedia and extended bibliographic resources. These packages were designed to have many points of entry for users, and to be interconnected, creating a networked resource. It has been great to be able to take advantage of the different ways to present information that being digital affords. Each entry has a short body of text, providing a comprehensive overview of the topic at hand, as one would expect from the classic encyclopedia format. In addition to that, however, there is at least one image for each entry, and usually more. We often have relevant audio and video files as well. Each entry also has two bibliographic sections; one containing the sources used by the author in writing the article, and then a second, related resources section which contains primary and secondary sources, identified as such, for those wanting to learn more. These have direct links to the resource where available, such as digitized journal articles or newspapers. We wanted to capitalize on the richness and pure volume of information available over the internet, but still provide a guided experience by carefully selecting what is included and plugging it into a clearly defined structure that is the same for each article.

We also were very strategic in how we built MNopedia. The digital infrastructure was constructed in the first half of 2011. After evaluating other models, the decision was made to be open source, which the team felt would be easier to maintain and update as needed. We were fortunate enough to have an in-house team of developers and designers, who explored and evaluated many different modules with different functionalities to get at what we thought would work best for what we needed and what we wanted the site to do. With those pieces in place, and a starting core of thirty entries, MNopedia was launched in August 2011.

The August 2011 launch was a beta launch, and the site was clearly identified as such. We launched in a beta stage to benefit from public input and testing early on, so that aspects that did not work as well could more easily be changed, again taking advantage of the flexibility of being digital. We commissioned user tests, conducted focus groups, and more informally asked our readers to give us their feedback. Adjustments were made in the first six months after going public, but for the most part we found that we had a pretty strong structure. The most consistent feedback we received praised the resource but desired more content, so our focus shifted from construction to increasing content production, where it has largely remained since.

One of the biggest changes in our content production since launch has been the shift from primarily paid, in-house work to almost entirely outside, community-sourced volunteer contributions. This was a goal from the beginning, as _MNopedia's_ budget and paid staff are small, smaller than those of comparable encyclopedias, and the resource was not going to grow fast enough without more authors. We have benefitted from serendipity as much as calculated effort, however. Although there have been dedicated campaigns to reach out to writers through community organizations, speaking to interested groups and personal networking, many authors have approached our editors because they saw and liked the resource and wanted to contribute. Aside from helping us to grow our content base faster than otherwise possible, these authors also help us get at areas of expertise and local knowledge that it would be harder to tap into without them. Another expressed goal of _MNopedia_ from the outset, due to the nature of our initial funding and the philosophy of the editorial team, was to lift up the often overlooked history held in smaller communities across the state. _MNopedia_ provides a home for stories previously unknown and images undigitized, and brings them to a worldwide audience. The encyclopedia goes beyond the big stories everyone knows and provides something more nuanced, with more layers. Being digital makes this possible, as our space is limitless, unbound by a page count and printing costs.

We removed our beta designation in September of 2012, as our core structure seemed to be largely set, but _MNopedia_ is still a young resource. We have a long road ahead, but are at a very exciting phase. The team is still exploring new ideas, for example, ways to make our home page timelier. For example, in spring 2012, we hired three web development firms from three different locations across the United States to brainstorm how they might deliver _MNopedia_ content via an app or similar. Each firm

had a distinctive proposal, some geo-located, some game-based, all intriguing. We spent the first half of 2013 refining parts of our infrastructure, to make the search function more robust for users and to make it easier for staff to publish the articles. Our work on the structure of the project will never be entirely complete, a responsibility and gift of being digital.

We also continue to explore new ways to enrich our content and deliver more of it. Volume is essential, and building that is on-going. Beyond volume, though, the team is thinking about what we deliver and how it is presented. Entries already include text blocks, chronologies, maps, and multimedia, but we regularly try out new tools for content delivery as they become available. We need to keep up with our audience and what they expect.

What do audiences look for and what can an encyclopedia provide now? With the sheer deluge of information available in the twenty-first century, people are looking for curation, to avoid being overwhelmed. Encyclopedias fill a needed role, as their function is to carefully collate and distill information down to its essential elements, and then communicate it back clearly and concisely as a cohesive entity. At the same time, people expect to get answers to almost any question very quickly, and encyclopedias can provide that too. In _MNopedia's_ specific case, our association with the MNHS and its established brand predisposes people to trust us as a resource. We reinforce the initial trust granted by the quality of our work and rigorousness of our process.

Encyclopedias are changing and there are exciting new opportunities to serve, preserve, and to share knowledge. We can engage with our readers in ways not possible before. At the same time, we are the guardians of a certain type of authority, one that has historically been ascribed to this type of resource. It's a balance, and a tricky one at times. However, there is room to change and grow, both for _MNopedia_ specifically and for encyclopedias overall. From what I have

seen and experienced, I think things will keep moving, and the field will continue to transform. Our task as scholars, writers, editors, and people interested in information and its dissemination is to keep up.

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What Future for Traditional Encyclopedias in the Age of *Wikipedia*?

Field Report by Michael Upshall

The launch and rapid domination of *Wikipedia* as a reference tool for the Internet was as dramatic as it was unexpected. *Wikipedia* broke so many of the rules of reference publishing, which, even if not formally codified, had been widely accepted for many years: the use of (usually named) authorities as expert contributors, and the presence of moderating editors to ensure balanced structure. All this appeared to have been swept away with Wikipedia, and, not least because Wikipedia content is given away rather than sold, the competition between Wikipedia and most general-purpose encyclopedias was a sad and rather one-sided affair. One by one the existing commercial print general encyclopedias admitted defeat; among the latest is *Brockhaus*, the leading German encyclopedia brand, which ended publication early in 2013.

Of course, scholars and critics have commented on and frequently condemned the Wikipedia editorial model (many of them summarised in *Wikipedia's* own article 'Criticism of Wikipedia' (Wikipedia 2014b), but paradoxically, the greatest threat to *Wikipedia* as the default reference source for general information is, I believe, the very technology that brought it into being: the Internet, in its latest incarnation as the Semantic Web. For those unfamiliar with the Semantic Web, it can be defined as 'the exchange of information on the Web via machine-processable data' (Cambridge Semantics 2014), although there are many other, more elaborate and often less precise definitions. What is described as a 'Semantic Web' below is simply the use of automatic tools to pull together content that is more or less related around a common topic. In this paper I examine some of the claimed strengths of *Wikipedia* compared to traditional print encyclopedias, and examine them in light of Semantic Web developments.

What Advantages do Online Encyclopedias Have?

Range

With a print encyclopedia, every page costs money to print. As a result, even the largest general print encyclopedias contained relatively few articles: the French *Encyclopédie* had 60,000 articles, and *Encyclopaedia Britannica* 65,000. With over four million articles (Wikipedia 2014d), the English language *Wikipedia* covers more subjects than any earlier encyclopedia; even so, the number of potential articles is many more than this. Although *Wikipedia* guidelines for editors state that only 'notable' topics should merit an entry (Wikipedia 2014e), there is little agreement on exactly what notable means. In practice, the all-embracing aims of *Wikipedia* mean it is difficult, if not impossible, to resist the inexorable inclusion of additional content. This indicates the impossible challenge that Wikipedia has set itself: in its aim to cover the entire spectrum of knowledge, it cannot set any limits to what is notable. *Wikipedia* is filled, as a result, with articles on topics of marginal interest or value.

The real issue here is quality. Range and quality are of course related. The larger the number of articles, the more difficult it is to curate them, and this seems to be what is happening with *Wikipedia*. *Wikipedia's* own table of Wikipedia article quality ratings (Wikipedia 2014f) reveals that there are over 500,000 entries that have never been assessed by a *Wikipedia* editor. In other words, *Wikipedia* acknowledges it cannot keep up with its own content generation. At the same time, the number of volunteer editors is declining: Wikipedia

admitted in 2009 and again in 2012 (Meyer 2012) that the number of editors and administrators has been declining steadily since 2006.

Topicality

The Achilles' heel of print encyclopedias is always topicality. The work of commissioning content from experts, followed by a critical review, meant that the process of creating and updating an encyclopedia always took several months if not years. The cost of printing means that it is uneconomic to replace an entire volume for the sake of a few updates. When *Wikipedia* was launched, it astonished users because it contained updates from the last few hours. It was as up to date as a newspaper – something unheard of in the slowly moving world of print encyclopedias. Yet *Wikipedia* continues to be updated via a curated model, which means there will always be a delay of several hours from an event occurring and its record in *Wikipedia*. Updates only take place when a user or editor goes into an article and makes a change. In contrast, the Semantic Web model, by publishing dynamically, ensures the most recent updates are immediately available. The Semantic Web will always be more current than a curated model.

Quality

Traditional encyclopedias usually start with a long list of contributors and their academic qualifications – the credentials are often as important as the names. Of course, anyone can edit *Wikipedia*, regardless of ability; the anonymity of contributors makes it impossible to determine who has edited any entry. One of the paradoxes of *Wikipedia* is that registration as a user ensures anonymity more than simply adding or editing content without registration – in the latter case the contributor's identity can be traced. By ensuring anonymity, and not providing sufficient curation, *Wikipedia* is open to allegations of simply representing the views of interested parties; in

other words, it may be no more objective than the rest of the Internet.

In the absence of named contributors, *Wikipedia* employs a visible team of editors to review its own content – in public. It is common to see a *Wikipedia* article that has a message attached to it, for example 'This section may require clean-up to meet *Wikipedia's* quality standards'. It has set up a 'Cleanup Taskforce' to deal with inadequate content (Wikipedia 2013). According to its own (not very widely disseminated) quality rating, only around 0.63% of the 4.3 million articles are ranked 'good' or better (Wikipedia 2014f). An academic study suggests that the quality of articles in Wikipedia correlates with the number of edits they have received (Wilkinson & Huberman 2007). However, while the authors of this study state 'We also demonstrate a crucial correlation between article quality and number of edits, which validates *Wikipedia* as a successful collaborative effort', I would argue in contrast that a high level of (voluntary) editorial input cannot be sustained, and an increasing proportion of *Wikipedia* articles will remain without independent editorial intervention. Wikipedia, in other words, is rapidly moving to an agglomeration of articles created and maintained by interested parties promoting a product, person or viewpoint.

Diderot's *Encyclopédie* did not have signed articles (although the identity of the author has in most cases been identified). Similarly, Wikipedia articles are unsigned, and many are composite works by several authors. To compensate for the lack of authority by not having named authors, Wikipedia emphasises the importance of citations, and it would seem a valid methodology to try to compel editors to include citations for any claims.

What about quality with the Semantic Web? Intriguingly, the Semantic Web makes no attempt to differentiate content sources; in this sense it is truly democratic. The nature of the Internet means that curated models will become rarer

with time. The Semantic Web is truly democratic, in that no attempt is made or can be made to the user is left to ascertain for him- or herself how reliable the sources are.

Multimedia

Print encyclopedia publishers know that visual material – photos, diagrams and tables – always attracts a disproportionately high attention from readers. Of course, since limitations of space disappear on the Web, an online encyclopedia should outclass any print-based product. Indeed, *Wikipedia* is probably one of the most illustrated encyclopedias available – yet it could be considerably better illustrated. Entries for painters contain at most a handful of their works. *Wikipedia* has a purist approach to content, and tries to keep dictionary definitions in *Wiktionary*, quotations in *Wikiquote*, source content (and many works of art) in *Wikisource*, and so on. For many readers, a valid appreciation of a subject comes via a combination of all of these. In contrast, a Semantic Web mash-up (a dynamically created combination of content from many sources) has no difficulty in including multimedia of many types, such as photos, videos, quotations, definitions, and chemical formulae, as for example in the Learn Chemistry website (http://www.rsc.org/learn-chemistry). *Wikipedia* would benefit from displaying its own resources in a mash-up, and by including selected third-party content sites.

Balance and Bias

Perhaps the biggest single problem faced by a traditional encyclopedia publisher is to ensure balance. Major topics should have the longest articles, and all the articles should follow a similar style. But equally, there should be no consistent political or cultural bias. Such a structure requires substantial editorial capability on the part of the publisher. While one of *Wikipedia's* editorial signposts is the importance of balance, it is well-nigh impossible to create balance using thousands of volunteer editors and

contributors, all of whom have access to change the content at any time. Even *Wikipedia's* greatest admirers would admit that *Wikipedia* is more an agglomeration of content that will always lack balance, and the consequent lack of authority that this imbalance implies.

A further consequence of *Wikipedia's* emphasis on anonymity for contributors is that without being able to track authorship of content, *Wikipedia* is open to abuse by interested parties writing articles that promote a product or company.

Linking

Traditional publishers have spent many hours attempting to provide cross-references to ensure users are taken as quickly as possible to where the editors have placed an entry: a publisher can place content under 'sea' or 'ocean', but it is impossible to ensure that users always go to the place where the editor chose to put the content.

Many online encyclopaedias, including *Wikipedia*, attempt to solve the problem by converting every example of a word into a hyperlink. Thus, the *Wikipedia* entry for Johann Sebastian Bach states (Wikipedia 2014c) that he was a 'composer, organist, harpsichordist', with organist and harpsichordist as hyperlinks to their respective article. The article for Antonin Dvorak (Wikipedia 2014a) states he was a Czech composer, with 'Czech' being a link. Such a system is easy to implement, but of very limited value to the reader.

Linked data, the expression of relationships in a machine-readable way, is already flourishing in many subject areas, notably life sciences and medicine. One typical use of linked data is to present coverage of a single topic using automatic tools to generate the content. This enables a combination of different media types that Wikipedia seems reluctant to attempt. While Wikipedia content is available as linked data in the form of DBPedia, this is very different from the creation of a genuine linked reference work.

One idea for reference publishers is to take advantage of the multiplicity of viewpoints and interpretations; for example, *Credo Reference* (http://corp.credoreference.com/) do this very well with their topic maps, combining content from several publishers, as well as multimedia. Individual institutions can even create personalised compilations for their users. Of course, some of these treatments may be in disagreement, but the implied acknowledgement that the content is from different providers is, I believe, more sustainable than the *Wikipedia* model.

Wikipedia is not linked data, any more than traditional print encyclopaedias. Every 24 hours, an automatic process is run on Wikipedia to extract machine-readable parts of the content (for example, population figures, dates of birth and death). It is the resulting *DBPedia* that is machine-readable, not *Wikipedia*. The *DBPedia* project, carried out by researchers at the Free University of Berlin and the University of Leipzig, is independent of *Wikipedia*, and only uses a tiny fraction of the total information in *Wikipedia* – that part that can (almost by accident) be converted easily to linked data. It could be argued that the attempts by *DBPedia* to improve the quality of its information, for example *DBPedia Spotlight* (https://github.com/dbpedia-spotlight/dbpedia-spotlight), a tool for disambiguation of named entity references, are of more long-term value than all the *Wikipedia* editors.

Credo Topic maps: an example of a subject mash-up
Notice that Credo reference does not currently include content from Wikipedia or from DBPedia, although there is no reason why it should not.

Conclusion: Recommendations for Reference Publishers

In the age of linked data, there remains a vital role for the single-subject curated reference work. Reference publishers can provide these resources with credibility and their limitations of scale make them easier to maintain at a consistent level of editorial integrity that *Wikipedia* cannot achieve. Free but discredited is an improbable business plan.

At the same time, astute publishers will incorporate some (but not all) of *Wikipedia's* editorial model, for example involving the public in aspects of the content creation and updating, using crowd-sourcing models, for example to suggest updates.

Users will increasingly access reference works via multifaceted websites that take advantage of current technology to combine several different sources, often from different publishers. This linked-data model will increasingly reduce reliance on *Wikipedia* as the default source of reference content via the Internet.

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