Mapping the "Mighty Maze:" the Nineteenth-Century Serials Edition

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> In the mighty maze of modern periodical literature, the busy man wanders confused, not knowing exactly where to find the precise article that he requires, and often, after losing all his scanty time in the search, he departs unsatisfied [W.T. Stead].[1]

Stead's lament, written in the first number of his *Review of Reviews* in January 1890, suggests that the voluminous output of the periodical press is unavigable for the working reader. Of course, this lament is also a manifesto and Stead's new monthly journal was conceived as a potential solution to the problem. By providing digests of content with judicious quotation, the *Review of Reviews* would allow readers to locate the "best that is said on all sides of all questions in the magazines and reviews of the current month" (14). This reference to Arnoldian notions of culture radically reinterprets it. In locating value in the transitory, ephemeral media of the periodical press rather than the more stable, culturally ratified genre of the book, Stead challenges the connection between value and permanence. For his readers, Stead suggests, matters of importance are in the present and, as such, it is these must be made accessible through his *Review*. Processing the many pages published by the press every month through his "editorial thresher," Stead provides a map of the maze by both condensing and reinterpreting it for those too busy to read for themselves.

Stead also uses the phrase "mighty maze" in the preface to his annual *Index to the Periodicals of the World*. This publication, appearing annually from the *Review of Reviews* office, was also developed to tackle the "vast and multifarious world of periodical literature."[2] However, the longer period between numbers gave the *Index* a different perspective to the *Review*: rather than summarize the opinions in the press, the *Index* offers a more distanced portal to its more voluminous archive. This different structure implies different readers and Stead imagines the users of his *Index* as being distinct from those of his *Review*. Librarians – described curiously by Stead as the "living fingerposts to the literature of the world" – would especially welcome "such helpful guides through the mighty maze, and to the diligent students such a clue to the printed results of human thought is of almost indispensable value."

More an annual retrospective than a monthly review, the *Index* imagines itself as "a permanent guide for the use of the student, the journalist, the statesman and others, to the more important articles in the periodical literature of each year."[3] The very notion of permanence is related to this periodicity: appearing annually, the *Index* offers itself as a key to a fixed archive to things published in the past rather than a stream of publications appearing in the present; its readers are fellow-researchers rather than the "busy men" of new journalism.

Stead's (typically) grandiose title – this annual series represents no less than an *Index to the Periodicals of the World* – both effaces and gestures towards the necessary choices made by Stead and his indexer, Eliza Hetherington. Although he considers that "every publication, excepting a book complete in itself, may, strictly speaking, be described as a periodical," Stead believes this "term is, however, restricted in ordinary conversation to magazines and reviews appearing not less frequently than once a quarter, and not more frequently than twice a month."[4] This, of course, means that high-profile weekly reviews such as the *Saturday Review* and *Athenaeum* are neglected in the *Index*, as Stead groups them with newspapers. Equally, in favouring the monthly, Stead not only seriously misrepresents scientific developments by ignoring *Nature* but, in refusing to index specialist scientific titles, Stead's coverage of science is shaped by essays derived from the monthly reviews. Indeed, Stead's *Index* goes some way to determine the very concept of "general periodical literature" that it claims to survey. His own spiritualist interests are well-accommodated; and his global perspective makes no distinction between the British Empire and those countries that speak English. In mapping the "mighty maze," Stead also determines its architecture.

It is the creative nature of bibliographic intervention – especially in today's digital environment – that we discuss below. As increasing numbers of archives are converted into digital form, we must both recognize the specific demands of the material, and try to devise suitable technological solutions for rendering it in electronic form. Whether for pressing reasons of preservation, or for the additional functionality that electronic editions allow, the processes of filming, indexing, annotating, and structuring in digital form alter our encounters with this material, and reinterpret it according to our own ends. Just as Stead was very aware of the dynamic nature of the periodical archive, so our project, the *Nineteenth-Century Serials Edition* (**ncse)** offers more than just a static collection of six very different titles. The unexpected cross references, echoes, and subjects that occur across the edition, coupled with

the potentially endless ways in which readers can navigate through it, replicates similar problems of plenitude. This paper is in two parts: the first provides an account of the periodical archive, the challenges it presents, and the some of the ways existing electronic sources have confronted them; and the second details **ncse**, and suggests the ways in which we have interrogated the conceptual and methodological issues that have arisen during its initial stages. The paper concludes by returning to the concept of the mighty maze: in producing **ncse** we have sought to avoid circumscribing its usership; however, in delineating content and determining relationships we necessarily provide structure. Like Stead, we risk imposing bibliographic order at the expense of liberating both content and the user; and equally, in offering interpretive metadata, we impose our own academic interests upon both our actors in the past and our unknown users yet to come.

I.

The ubiquity of the periodical press in the nineteenth century is both one of its biggest attractions to scholars in nineteenth-century studies, but also presents its greatest challenges. Periodicals, as portable, relatively stable commodities had a life far beyond that of their first readers. They were passed around, re-sold, broken up, and, of course, collected. Their cost ensured that they were a convenient medium for both readers and publishers: readers could experiment, perhaps trying out different titles or combining reading according to their specific needs. The period was one of speculation, and technological developments in production and distribution facilitated a boom in the number of titles published, dispersing them across the world as never before. John North, editor of the *Waterloo Directory*, writes that "Victorian periodicals and newspapers are more than one hundred times the volume of printed books, with a correspondingly stronger influence, whether measured by the number of issues published or the combined circulation."[5] If the basic bibliographic unit is the single issue then these undoubtedly run "in the hundreds of millions" (ix). North estimates that these were organized in approximately 125,000 titles – far less of "a librarian's and bibliographer's nightmare" (ix) – but still an ambitious goal.[6] Most of these titles had short lives, appearing for a few numbers before failing or perhaps being aimed at a specific historical event. As a result, if they survive at all, it is usually in small, fragmentary runs, often housed in unexpected places. For the more successful, the lengthy recovery of costs meant publishers

and had to identify and satisfy groups of readers over shifting cultural contexts.[7] The highly-competitive market encouraged innovation and speculation, as publishers and editors identified and to some extent shaped extant sectors of readers, luring them with a diverse array of images, interactions, and content. The need to fill each issue, negotiating between novelty and familiarity, ensured a vast amount letterpress was printed: of course not all of it was original, and the nineteenth-century press is notorious for its self-referencing, imitation, and outright piracy.[8]

It is this curious combination of overwhelming print and recurring content that challenges us today. Not only do the volumes on library shelves only represent a fraction of what was published in the nineteenth century, but they also misrepresent their form. W.T. Stead claimed that only 1% of readers bound their periodicals; our encounters with the archive suggest a physical and conceptual unity that individual numbers lack.[9] It is now well-recognized that the bound volumes of periodicals that lack the advertising wrappers, covers, and often supplements efface their origins in the wider context of the publishing industry and give a false impression of reading practices.[10] For instance the *Monthly Repository of Theology and General Literature* (1806-1838), one of the six titles that we are digitizing, contained advertisements from its inception in 1806. Until 1831, the journal had a close relationship with the British and Foreign Unitarian Association, and often published their pamphlets as supplements. A run held by the Bodleian still has these supplements bound within annual volumes. However, each is marked with a pencil inscription which reads "to be retained," a tantalizing hint at the material that was summarily excised. Another of our six titles, the *English Woman's Journal* (1858-1864), not only came with a monthly and an annual wrapper, but also with campaigning pamphlets and registers of employment. These were far more than supplementary material: they were the textual adjuncts of the institutions located at Langham Place.[11] Very few surviving runs of the *English Woman's Journal* still contain this material, and so the link between the actual workings of the Langham Place group, and their journal, are severed. Without such material, bound volumes of periodicals tend to reinforce an often arbitrary division between types of content, deeming some more relevant than others, and so elide the foundational relationship between the periodical, its producers, and the market.

A consequence of our limited encounter with periodicals as historical objects is that our sense of the contours of the genre is skewed. The conventional narrative of periodical development throughout the century begins in Scotland, usually with the *Edinburgh Review* in 1802 and its great rival the *Quarterly Review*, which was founded in 1809. *Blackwood's Edinburgh Magazine*, established in 1817, fully exploited its monthly periodicity to provide a more lively commentary than the quarterlies on literary affairs.[12] Cheap literature is often represented in tandem with the reform movement through *Chamber's Edinburgh Journal* and the *Penny Magazine*, both established in 1832. The next development of note tends to be the emergence of the shilling monthlies such as *Macmillan's* (1859), *Cornhill* and *Temple Bar* (both 1860). Of course the cultural prestige of Dickens establishes a place in this narrative for his weeklies *Household Words* (1850) and *All the Year Round* (1859). The 1860s are also associated with high-brow publications such as the *Fortnightly* (1865) and *Contemporary Review* (1866). James Knowles's link with the *Contemporary* is often used as a bridge to his innovative half-crown monthly the *Nineteenth Century*. First appearing in 1877, its broad intellectual sweep is regarded as the last embodiment of polydiscursive Victorian intellectual curiosity: a seriousness that is swept away by disciplinary specialization and the trivialities of the new journalism, heralded by the arrival of *Tit-Bits* in 1881.

This narrative will be familiar to everyone studying periodicals, and its shortcomings are obvious. There is no mention of high-selling popular journals such as the *Mirror of Literature* or the *London Journal*; it masks the burgeoning working class publications, radical and otherwise, that are often a silent "other" to the middle class reviews; and there is a bias towards certain forms of writing – the essay review and other literary genres – and certain types of canonical writer. What might be surprising is that this is a nineteenth-century canon of periodicals, taken from Stead's *Index* in 1892. That it still has currency today is because it is inscribed within both our bibliographic tools and intellectual structures. For instance the invaluable *Wellesley Index*, which appeared in 5 volumes between 1966 and 1979, gives contents lists and attributes authorship for most of the titles just listed.[13] A cd-rom version in 1998 helped open up the substantial scholarship of the *Wellesley*, allowing keyword searching of the full text across all its volumes. Despite this increase in functionality, the cd-rom is simply a version of the paper-based resource, so its content remains limited to the 45 monthly and quarterly titles in the printed version. However, the *Wellesley* has significantly opened up

these titles for further research. Indeed, a consequence of the *Wellesley's* position as perhaps the pre-eminent guide to periodical content and authorship has concentrated scholarly attention around its titles, maintaining both this inherited canon of work and an intellectual fetishization of the author.

The bias inscribed in the *Wellesley* is partly due to the survival and republication of nineteenth-century resources such as *Poole's Index to Periodical Literature*. *Poole's Index*, first published in 1882, covers approximately 479 British and American periodicals from 1802-1881, with supplements bringing it up to 1906.[14] *Poole's* is a subject index, which allows a more sophisticated gauging of content than is possible with the *Wellesley*, but the subjects are mostly derived from the titles of articles, and so might not adequately capture the scope of the text itself. As a subject index, it takes the opposite approach to the *Wellesley* and foregrounds the intertextual links between content rather than authorship. In addition, individual entries are by volume and page: in order to find out dates users must consult the tables to work out what year a volume was published in. Subsequent publications such as *Poole's Index Date and Volume Key* and *Cumulative Author Index for Poole's Index to Periodical Literature 1802-1906* remedied some of these concerns.[15] *Poole's* and its supplements were combined in a digital edition, *Poole's Plus*, which increased accessibility to the index by providing interoperable searching across all its components. *Poole's Plus* has recently been integrated with other resources – including Stead's *Index* – as part of *19th Century Masterfile*.[16] Just as the previous incarnation of *Poole's* redefined its scope by incorporating formerly discrete parts, so its presence within *19th Century Masterfile* further expands its nominal limits by opening it up to further cross-references. Under its more sophisticated umbrella portal, *Poole's Index* is beginning to operate successfully as part of a cross-referenced cluster of bibliographical resources that might begin to direct scholars into some more neglected sectors of the archive.

The resource that offers by far the broadest scope is the *Waterloo Directory*. This is a projected five series set that will, when completed, give bibliographic details for approximately 125,000 periodicals. At present it is in its second series – a twenty volume edition that provides listings for 50,000 titles. Each series incorporates the previous, rendering it obsolete. The printed volumes have five indices – "Title," "Place of Publication," "Issuing Body," "People" and "Subject" – already much in advance of the other resources, but the

electronic application goes much further. The *Waterloo* has had an electronic component since the publication of the first series as a cd-rom in 1994, and has had online components since 2001. The web application is extremely powerful, allowing searches to be delimited through any of the five indexes, as well as global free text searching across the site. Not only are users able to easily re-configure the bibliographic entries according to their own search criteria, but the keyword searching also provides access to the supplementary information supplied by the compilers. The ability to combine and specialise searches allows users to delimit data in new ways, and this, combined with the scope of *Waterloo* often uncovers information about unfamiliar titles, figures, and publishers as well as the hitherto overlooked relationships between them, and more well-established actors.

The recently published *SciPer* index is more focused in its approach and, unlike the others, is freely available online.[17] Based at the Universities of Sheffield and Leeds, *SciPer* brought together scholars from English, History, and History of Science, drawing on their specialist knowledges to provide interpretive accounts of science in the periodical press. Recognizing that science is part of a wider cultural context, the *SciPer* team read periodical numbers in their entirety in order to locate scientific content in both scientific and non-scientific spaces. This allows users to track controversy into unlikely arenas: well-known essays such as G.H. Lewes's "Studies in Animal Life" published in the *Cornhill* suddenly find unexpected resonances in other parts of the magazine, including serial fiction and seemingly unrelated essays.[18] The first edition of the index provides analysis of eight titles, including well-known journals such as *Punch*, *Cornhill* and the *Review of Reviews*. The second release will include a further eight titles, ranging from *Blackwood's* to the *Wesleyan-Methodist Magazine*. By incorporating familiar and the unfamiliar titles, drawn from throughout the nineteenth century, the *SciPer* index allows users to navigate both synchronically and diachronically, tracing scientific content as it appears in different departments of the press.

The *SciPer* index both negotiates the inherent structural limits of the genre - i.e. how to identify relevant content without compromising the formal integrity of the source material – while also recognizing the limits of our disciplinary perspectives. Although *SciPer* risks over determining the scientific content by extracting it from the periodicals, the pursuit of such content in non-scientific spaces gestures towards the interconnectedness of nineteenth-century culture and the accompanying annotations and metadata ensure that this trans-

disciplinary context remains visible. This tacitly recognizes that different portions of magazines and journals structure content in different ways, addressing the chief shortcomings of those resources that index by article title (*Wellesley*, *Poole's*) without recognizing the multivalent nature of the periodical text. Although *SciPer* extracts science at the expense of other subject matter, it respects the formal features that structure it. *SciPer*, of course, was designed to do just this: science as cultural practice is embedded within all kinds of difference discourse, and it is only by reading entire periodicals that the breadth of scientific discussion can be recovered. This inscribes the constitutive importance of context within the index as a whole. Whereas the other indices treat the archive (however they define it) as a resource from which data must be extracted, *SciPer* – while doing something similar – foregrounds the role of the periodical in constituting this information.

By giving access to the different aspects that make up the genre, *SciPer* demonstrates that computing offers new opportunities to engage with periodicals. Recent full-text electronic archives have begun to offer access to images of the pages themselves. This solves the problems posed by dispersed, fragmentary source material, but often does little to address the specific conceptual demands of the genre. The *Times Digital Archive*, for instance, offers free text searching of the newspaper between 1785-1985, with results displayed on facsimiles of the page. While this radically opens up the *Times* as a resource for all sorts of uses – including finding biographical information, legal cases, or tracking news stories – it contains little in the way of architecture to structure this data.[19] Equally, although the index allows users to navigate the archive by department, these divisions – "advertising," "business," "editorial and commentary," "features," "news," "picture gallery" – are anachronistic and often arbitrary. This is largely enforced by the scope of the *Times Digital Archive* but, in offering these categories as stable across its entire run, the project does not acknowledge the contemporary politics that structure their different degrees of importance. Like all full text search engines, the results for the archive are only as accurate as the text entered: even though the search terms can be modified by Boolean operators and date limits, there is little that can be done to limit the retrieval of synonyms. Although this can prove unwieldy as the number of hits can easily exceed the capacity to browse, the situation is not much different from using print resources, and perhaps remains a question of professional practice as much as software development.

It was partly on these grounds that the *SciPer* team rejected providing scanned images of the periodicals. They write that "As digital publishers themselves recognize, only a scholarly reader can reliably identify and index those references in a periodical text which are likely to be of relevance to scholars."[20] As an index rather than an archive, *SciPer* applies its scholarship to produce informed lists and annotations, rather than offer versions of the periodicals themselves. One of the goals of **ncse** is to draw upon our intellectual and technological resources to produce accurate electronic versions of the paper-based resources. A consequence of the increasing academic attention to the press has been an imposition of twenty-first century disciplinary boundaries onto this nineteenth-century material. It could be argued, for instance, that certain periodicals have multiple lives in various disciplines: the *National Reformer*, as organ of the freethought movement, has interest for researchers into radical politics while remaining an important source for late nineteenth-century popular science.[21] Equally, for historians of science the *Academy* is often viewed as a precursor to the famous weekly *Nature*, while for literary scholars it is an important source of high-cultural endeavour.[22] A further example might be the way the criticism of *Blackwood's* and the early nineteenth-century quarterlies are interpreted by supporters of the Lake Poets. As readers look to the nineteenth-century press for material, they often neglect what appears irrelevant, and so ignore the necessary juxtapositions of content designed to appeal to configurations of readers.

The nineteenth-century press challenges us not only to think beyond our disciplinary perspectives, but also to recognize the extent to which these constitute the object of study. For instance *Tomahawk*, as a Saturday weekly, is positioned on the margins of the newspaper, commenting on the week's events. Just as its nineteenth-century readers were embedded within their culture, so its twenty-first century readers must enter a world in which sport, popular literature, theatre, local politics, dining, manners, gossip and rumour are matters satirized with as much relish as Parliamentary events. As the journal is a weekly, the relevance of many of the figures and events that it references are transitory, structured by the week's events rather than the stabilizing perspective of the historical gaze. These historical blind spots also apply to its genres: while its political satires, mock reviews, and sketches are relatively familiar, its weekly puzzle, which is the only part of the title that includes a direct address to the readers on behalf of the editor, is far more difficult to understand. To capture the complexity of *Tomahawk* demands considerable intellectual versatility coupled with an

unfeasibly broad historical awareness. In presenting the journal for readers today, we must recognize that our circumscribed set of knowledges will inevitably privilege the familiar; what we must ensure is that others can elucidate its more oblique allusions by privileging interests of their own.

        ncse is interested in the periodicals themselves and, rather than consider them as archives to be mined, we aim to draw upon our expertise to facilitate their use in ways that recognize their complexity. In acknowledging the conceptual structures, references and content that shape the periodical press, the project seeks to present these formal aspects of the genre as constitutive components alongside more familiar content. It is these generic aspects, linked to historical contexts and embodied in material form, that are so easily lost in transcripts that privilege the word over the other semiotic marks on the page. By reuniting fragments of runs, and capturing the elaborate cultural resonances and responses of the time, we hope to allow all internet users access to this rich, but perplexing, body of work.

<center>II.</center>

Existing resources have undoubtedly already done much to change the ways in which nineteenth century periodicals can be accessed and used but the relationship is a reciprocal one. As much as the proliferation of large scale electronic resources has conditioned our scholarship, scholars are also now desirous of resources tailored to their current interests and perspectives. Indubitably, one of the most pressing current scholarly imperatives is to create resources which both preserve what is gained in readers' experiences of engaging with periodicals as historical material objects, and concurrently exploit the potential of the digital format in the access and use of these objects. It is opportune then that new developments in the ways in which objects can be rendered electronically, new methods of working and the proclivity of funding bodies towards such projects now offer the possibility of creating just such resources.[23]

        ncse aims to create a resource which will satisfy this scholarly adjuration, but which will also be of interest and service to the wider public. A three year Arts and Humanities Research Council (AHRC) funded project, **ncse** seeks to achieve two key objectives. First the **ncse** project responds to the pressing need to preserve these fragile printed items in ways which maintain their integrity as historical material objects. As physical collections are often

incomplete, and deteriorating quality hampers access, electronic editions offer to new opportunities to re-present such material in a way that is, for the first time, comprehensive and freely available meaning that the material can be used in entirely novel ways. The project seeks to establish a unique Text Encoding Initiative (TEI) compliant full-text digital edition of six diverse nineteenth-century serials and make this freely available via the web. Optical Character Recognition (OCR) technology will enable users to search the full text of the whole edition whilst viewing readable facsimile images of the pages on which their highlighted search strings appear, or to simply browse the edition wholly or by page, issue, volume or title. Second, **ncse**, aims to formulate and implement new ways of realising our current scholarly conceptualisation of these materials in electronic form, allowing users to not only to engage with the extra-textual elements of these objects, but to use those elements to delineate different types of content in searching and browsing. In order to achieve this end **ncse** is engaged in planning its 'ideal edition': producing models which express our current scholarly conceptualisation of the material's content, physical features and semasiology. These models can then be drawn upon to design the information architecture of the resource. We aim, with this work, to map all that we imagine might be possible in electronic editions and to implement as much as we, with our limited resources, can of this mapping in the **ncse** resource.

The processing of our source materials was thus initially broken down into a number of partially overlapping stages. Firstly, researchers on the project familiarised themselves with the publications and began to formulate ideas about what kinds of data we might want to capture from them. This task involved the reflexive application of a data template to a number of issues of each publication over its lifespan incorporating any metamorphoses it may have undergone. (See appendix one for the original template trailed by the team at the start of the project). The template was then expanded and adapted to allow publication-specific segmentation units and metadata fields to be captured. The team then began to produce a collective map of these data fields and the relationships between them that occurred across the surveyed material.

Overview of the mapping of the segmentation and metadata fields developed by the team during page turning (This is a work in progress)
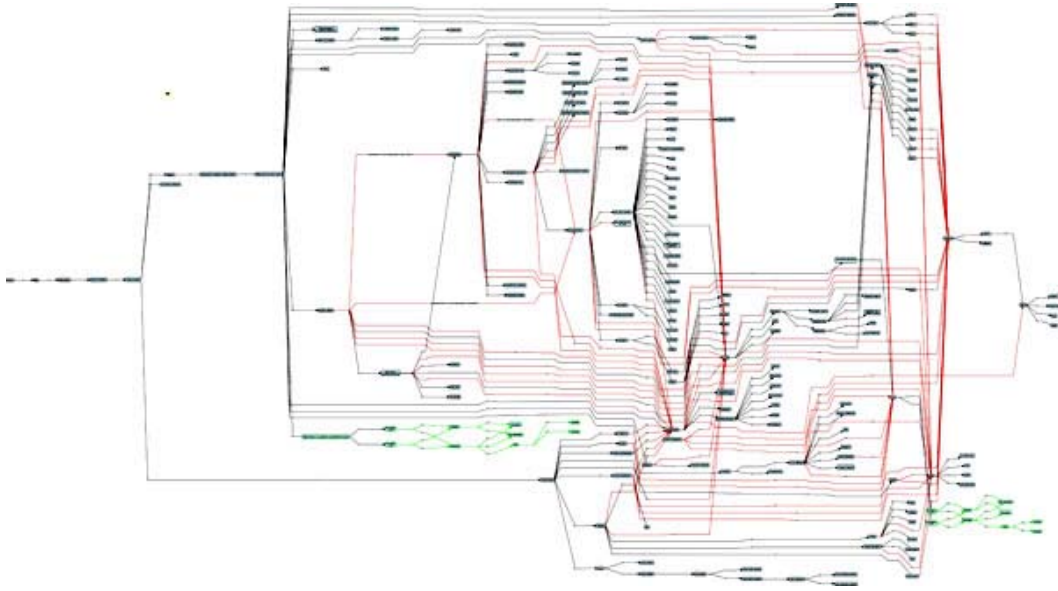
Detail of the mapping of the segmentation and metadata fields
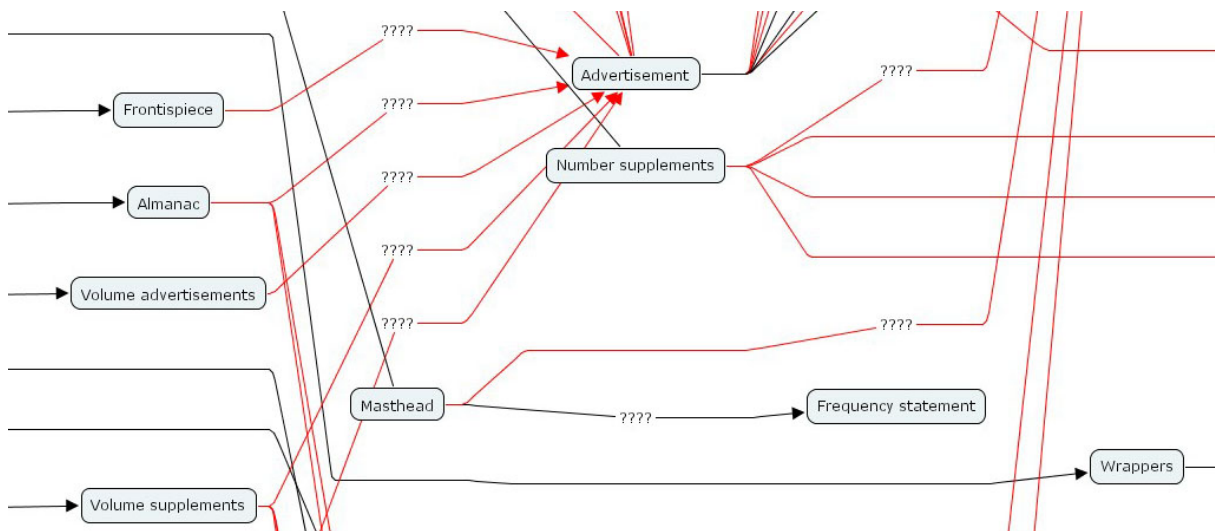
appropriate. This work required interpretation at every stage, our abstract conceptualisation of the source materials becoming concretely represented in the map as it was developed. In turn,

the requirement to map our sources forms and features in a structured way invited us to comprehend our material in a rigorous and abstract manner and no doubt systematised our conceptualisation of it to some extent.

The map represents, moving from left to right, increasing complexity and specificity in data delineation and moves from items which we anticipate will be automatically segmented, to those which would require manual segmentation and finally to metadata fields. Having a comprehensive picture of our source material has allowed us to map the boundaries between what might be captured at each stage of processing but also enables us to form priority lists when we face difficult decisions about what might be beyond capture given our resource allocation.

The creation of this map has flagged up some potential challenges in the way in which our data might be rendered. As is evident from the map there are instances where relationships between its fields skip levels. (e.g. department items) and some items 'float' and can exist at almost any level (e.g. price). The dilemma facing **ncse** is thus whether to enforce an artificial framework the sources (top-down) or to attempt to adapt framework to the sources (bottom-up).

Concurrently, the team also began to create a working concept map of the content of the six serials. Working from the ground up to develop categories and concepts derived from the sources themselves, the team began working with samples from each of our six publications and attempting to classify their content; from editorials, letters, adverts and cartoons to the publications' apparatus; imprint statements, subscription information and mastheads. The team's work with these samples was built cumulatively into a concept map which it is anticipated will continue to develop as the team works more with the materials.

Detail of the concept map currently in the process of being developed by the team
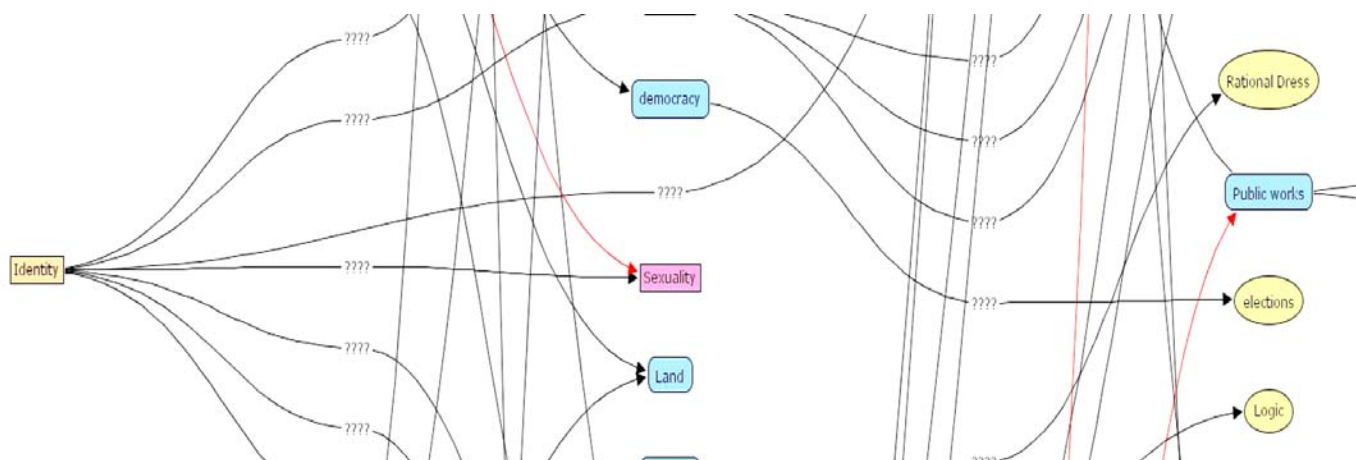
As will be discussed below, selected fields abstracted from the segmentation and metadata map and from concept map will be utilised, along with additional advanced metadata fields, as indices by which users can navigate and search the edition. However **ncse** expects that these mappings will also be hugely significant research outcomes in themselves. Like Stead's attempts to map the mighty maze of periodical literature for the needs of his contemporaries in the nineteenth-century our mapping re-presents and in so doing reconfigures this material for the purposes of the user in the twenty-first century. The resource will, it is hoped thus be of immense immediate use in its own right, but it will also be an edifice whose architecture embodies its epoch. Thus, **ncse** will function in the future as a record of a moment in the history of the field, and of a particular intersection between this and the ongoing development of humanities computing approaches, methods and products.

However, **ncse** hopes to use this opportunity not just to record but to stretch and develop current perspectives and ways of thinking about these materials. It may appear overly selective to chose just six from among the c.125,000 titles that John North estimates constitute the field of nineteenth-century periodicals; The *Northern Star*, The *Monthly Repository*, The *English Woman's Journal*, The *Leader*, The *Tomahawk* and The *Publisher's Circular.*[24] However, **ncse** has identified these six titles for their heterogeneity and complexity in terms of their form and content, their vita as material objects, and in terms of what they represent about the diversity of the serial as an analytical category, as well as for their general scholarly interest.

Together they represent some of the diversity and intricacy of the morass of print journalism and its communications networks in the nineteenth-century. In bringing these titles together in a single edition **ncse** hopes to at once challenge and reconfigure the concept of the serial. The titles include weeklies and monthlies, and, taking into account the *English Catalogue* published as part of the *Publisher's Circular*, annuals. The serials chosen cut across a range of disciplines and types of serials and readers. Whilst the *English Woman's Journal*, fits relatively readily into the periodical convention the others have been chosen to purposefully stretch the template. The *Tomahawk* for example was a weekly, packed with illustrations and self-consciously sets out to spoof the periodical as a genre with its spoof reviews, literary essays, news, leaders and even adverts. Similarly, the *Publisher's Circular*, a fortnightly publication, was packed with adverts and functioned as a trade journal to the print and publishing industry. The *Northern Star* meanwhile was self-consciously a newspaper, and the *Leader*, whilst considering itself a newspaper, in terms of content had a more ambiguous identity, being demarked into two clear sections, one concerning news and current events and one containing literary commentary and essay reviews.

The periodicals are also disparate in terms of content and purpose. The provincially focused *Northern Star* was a heady mix of mid-century working-class radical political commentary, international, national and local news, poetry, entertaining tit-bits and functioned as the official organ of the Chartist movement. The metropolitan and cosmopolitan *Monthly Repository*: radical, middle-class, at first Unitarian and latterly non-sectarian with its literary commentary, biblical criticism, and reviews. The *Leader*: a progressive, liberal and secular weekly headed by Thornton Lee Hunt and George Henry Lewes and reflecting both his scientific and literary interests. The *English Woman's Journal*: a mid-century, feminist yet respectable and middle class publication. The *Tomahawk*: a satirical alternative to Punch packed with comic illustrations and the *Publishers' Circular*: a long running London-centred trade publication for the print and publishing industry.

Similarly the periodicals that we have chosen also represent a variety of forms. From the closely set broadsheet columns of the grubbily printed *Northern Star*, to the crisp and well set demy octavo pages of the *English Woman's Journal* and the lively illustration packed fold-out pages of the *Tomahawk* the edition will give users a flavour of the wealth of choices available to nineteenth century readers.

The next stage of resource development will involve planning elements of the user interface in order to determine by which fields users will navigate and search the edition. At the most basic level preliminary segmentation developed in collaboration with our partners at Olive, will break down the facsimile images into hierarchically arranged navigable units within each title which, it is anticipated, will include volume, issue, department, article and sub-article item. Further work to develop this segmentation may then be carried out by the research team. This segmentation is chiefly intended to facilitate precise navigation but it is hoped might also be developed to allow users to direct text string searches of the full OCR text to specific levels of content.

However, the OCR text will not be 100% accurate and so we hope find ways to enrich the edition by marking up its content with some of the fields developed from our data and concept maps and with advanced metadata categories. To this end the team have begun to develop a model of our 'ideal edition' based on these abstractions, a proportion of which it is hoped will be realisable in **ncse**. At the most basic level this edition would allow users to delimit searches by segmentation units and additional metadata fields (e.g. article subject classifiers like 'advert' and 'obituary') developed from our data map.

At a more advanced level the edition would allow users to perform searches on advanced metadata categories which mapped to indexical terms throughout the edition, allowing users to trace their occurrence across and within the titles. **ncse** has so far identified seven main categories of this type: people, places, events, institutions, products, publications and businesses. Although the overlap between these categories is recognized – a publication can be a product, and a person can be a business – they are designed to delimit data in order that it can further be explored. The advanced metadata categories explicitly address some of the limits to free-text searching. For instance, much of the nineteenth-century press is pseudonymous: by marking up all people, it becomes possible to link authors to their pseudonyms, perhaps uncovering the more surreptitious activities of authors and editors in their texts. Equally, by identifying place names, we can situate them within a hierarchy – for instance identifying the Strand as a place important for the print trade, but also as a district within a larger entity called London. These categories also allow us to engage with indirect and non-textual material. When the "Great Exhibition" was being constructed and the Crystal Palace built, it was very rarely called by either of these names. Also, in *Tomahawk*, the

Crystal Palace is referred to in a number of allusions – usually to its resemblance to a crystal cake – none of which would be recovered by direct searches. Equally, the cartoons in *Tomahawk* – a key part of the journal taking up, in some cases, a quarter of its pages – would not feature in text searches as often even the captions are wittily oblique.

At the highest level **ncse** aspires to incorporate search fields based on our concept mapping of our sources. An interpretive search tool which would operate by identifying thematic content, it would allow users to reconfigure the edition according to their research interests. For instance, those interested in the urban would be able to delimit all items that deal with the experience of the urban across the edition by selecting the master category environment, and the subset urban. This searching would also, it is hoped, interact with the lower level search fields so that users could for example search for 'the domestic' only in adverts or search for 'justice' only in correspondence. The objective of providing searches based on concept map fields would be to provide non-linear search methodologies that would bind the edition together in unorthodox ways. By mapping the edition thematically, we hope to produce a new perspective on this material, complementing historical narratives with an emphasis on the interconnectedness of nineteenth-century print culture.

The combination of these different types of searches would enable users to navigate the edition while also providing a digital representation that preserves the architecture of the periodical. By providing digital images of the pages as well as the facility to perform complex searches on OCR text, the digital edition will render the cluster more accessible than either its paper forms or OCR plain text would alone. Simultaneous searching across the edition would emphasize its nature as cluster and, while **ncse** makes no special case for the interdependence of these six titles, demonstrate the inevitable cross-references inscribed within it.

What **ncse** aspires to achieve is to map the maze in a way that opens it up, offering users a chance to reconfigure the edition while retaining the historical integrity of the paper-based archive. Ascertaining the different ways in which the realisation of these goals might be approached and comprehending and quantifying the labour and resources which must be involved, is something which **ncse** regards very much as part of the research project. Essentially **ncse** is directed towards not only developing a workable electronic edition which will be of great use to our end users but in gaining valuable insight into what is necessary to create a digital edition informed by scholarly demands in this field. Whatever level we

achieve of the implementation of our mapping **ncse** will constitute both an investigation into the operation of new models of collaborative labour, between computing professionals, libraries, and academic and humanities scholars, and into the implementation of scholarly conceptualisations of source materials on digital resources which push the envelope of software development.

III.

It is incumbent upon researchers to recognise that the digitisation process enforces a reconfiguration of material and that the process of marking up texts is simultaneously one of re-making them. In working on our sample of newspapers and journals we have had to consider the ramifications of presenting them as a conceptually integrated edition of six disparate titles, and how this cluster bears on the periodical as genre. In recognizing both the arbitrary nature of the edition, while providing grounds for each selection, we recognize that our chosen six titles might represent a "false" cluster of texts, but insist that their diversity – both in terms of form and content – compensates for their specificity. The nineteenth-century periodical press is an exceptionally malleable and fragmentary print form: not only does the scale of this often widely dispersed archive prohibit exhaustive research, but even surviving runs of the same title can be strikingly different depending on the choices made at binding and preservation. In offering users complete as possible and interconnected runs we enable them to navigate their own way through markedly different texts, while equipping them to establish their own cross-references, whether at the level of generic similarities or broader historical and cultural trends.

      ncse is very much an edition: we conceive of the project as re-publishing these artefacts for the twenty-first century, and aim to utilize scholarly and technological resources to integrate features that will empower users to interpret them in meaningful ways. Just as our nineteenth-century predecessors exploited imaging technologies, typography, pricing arrangements, and distribution networks to identify and reach their imagined readers, so we hope that our imposed structures, added metadata, and online electronic publishing will enable us to reach ours. Our additional data, and the concept mapping tools, allow users to perform a wide range of sophisticated searches within the edition. Although the maps are, necessarily, restrictive – they offer suggested links between concepts – the combinations that

users select, combined with basic level searching, suggest that their respective constructions of the archive will exceed any conceptual relationships that we foresee. Our users, in other words, can map their own paths through the edition. The periodical press is increasingly recognized as a valuable resource for the recovery of those histories that have been neglected by discursive and disciplinary structures. Its complexity has, in a way, ensured the survival of narratives, figures, and events that have been overlooked, while also providing a context that frequently challenges our preconceptions of more familiar topics. While we cannot claim to offer definitive access to this rich material through our selective edition of six titles, we do hope to present our selection of this material in ways that respect its complexity while gesturing towards the benefits to research that such a presentation offers.

Just as Stead, in his annual index situated himself and his indexer beside those other indexes which dominated his journalistic life, so we hope that our project will complement others that are under way. Although we recognize the importance of standardised practices in mark-up and metadata, and believe that conforming to such standards can boost the longevity of the resource, we also offer **ncse** as an artefact of our historical moment. Whilst the concept maps – derived from the journals but not dependent on them – might be of use to others, they also represent a snapshot of contemporary scholarship in nineteenth century studies. Indeed, **ncse** is inextricably bound up within our own historical moment: not only will the theoretical distinctions that structure the edition eventually become outdated; but there will undoubtedly be more sophisticated ways of rendering full text images that would supersede ours.[25] In addition, the demands of our users might change: scholarship into the nineteenth-century periodical press has increased both in scope and sophistication of late, and we may find that both our maps and our metadata become so familiar as to become obsolete. But, like nineteenth-century futurists such as Stead who imagine the future through the present, we too have focused on the extant demands amongst our contemporaries.[26] We believe such an electronic resource offers users the potential to interact with this material in new ways. Digital technology, especially when served online, has the potential to serve any number of users simultaneously, while the data it houses can be manipulated in countless ways. We are keen to exploit this functionality to establish **ncse** as a flexible tool: it might become a valuable pedagogic resource, providing whole runs of periodicals to classes and enabling all students to work on the same number, at once; equally, the information recovered by searches or

browsing can be saved, exported, and used for private research without laborious transcription or damaging photocopies; also, and perhaps most importantly, our conceptually-aware structures acknowledge the forms of the periodical press in a way that is both sympathetic to their variety while also insisting on their constitutive value. In mapping the mighty maze, we have had to negotiate complexity without over-determining it. We believe that our tentative solutions actually offer a means of increasing this complexity, while making it manageable for users. Just as Stead's indices remain invaluable tools, and perhaps even become more valuable due to their idiosyncrasies, we hope that **ncse** offers the means to navigate this mighty maze while still retaining the potential for users to get lost, but not mislead, while using it.

Useful Links

- *Nineteenth-Century Serials Edition*

  http://www.**ncse**.kcl.ac.uk

- *The W.T. Stead Resource Site*

  http://www.attackingthedevil.co.uk/index.php

- *The Waterloo Directory of English Newspapers and Periodicals, 1800-1900*

  http://www.victorianperiodicals.com/

- *19ᵗʰ Century Masterfile*

  http://poolesplus.odyssi.com/19centWelcome.htm.

- *Science in the Nineteenth-Century Periodical: An Electronic Index.*

  http://www.sciper.org

- *Times Digital Archive*

  http://www.galegroup.com/Times/

- *NINES: a networked interface for nineteenth-century scholarship*

  http://www.nines.org/

- "E-resources for research in the humanities and social sciences - A British Academy Review"

  http://www.britac.ac.uk/reports/eresources/report/index.html

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[1] W.T. Stead, "Programme," *Review of Reviews*, 1 (1890), p.14.

[2] W.T. Stead, "Preface," *Index to the Periodical Literature of the World* (London: Review of Reviews 1893), unpaginated.

[3] W.T. Stead, "Preface," *Index to the Periodicals of 1894* (London: Review of Reviews 1895), p.iii.

[4] W.T. Stead, "History of Periodicals," *Index to Periodicals of the World* (London: Review of Reviews 1892), p.6.

[5] John S. North, "Introduction," in vol.1, *Waterloo Directory of English Newspapers and Periodicals, 1800-1900*, second series, 20 vols, (Waterloo: North Waterloo Academic Press 2003), p.vii. See also http://www.victorianperiodicals.com/

[6] The upper limit, of course, can never be definitely determined. Kate Jackson suggests it is as high as 150,000 titles between 1824-1900. Kate Jackson, *George Newnes and the New Journalism in Britain, 1880-1910* (London: Ashgate 2001), p.13 n.37.

[7] For an extended study of this see Andrew King, *The London Journal 1845-1883: Periodicals, Production and Gender* (London: Ashgate, 2004).

[8] Margaret Beetham, "Towards a Theory of the Periodical as a Publishing Genre," in *Investigating Victorian Journalism*, ed. by Laurel Brake, Aled Jones and Lionel Madden (London: Macmillan 1990), pp.19-32. See also Simon Nowell-Smith *International Copyright Law in the Reign of Queen Victoria* (Oxford: Clarendon Press 1968).

[9] W.T. Stead, "Preface," *Index to the Periodical Literature of the World* (London: Review of Reviews 1892), p.6.

[10] Laurel Brake, *Print in Transition, 1850-1910* (London: Palgrave 2001), pp.27-29.

[11] For the *English Woman's Journal* and Langham Place see Pauline A. Nestor, "A New Departure in Women's Publishing: *The English Women's Journal* and *The Victoria Magazine*," *VPR*, 15 (1982), 93-106; Sarah Dredge, "Opportunism and Accommodation: *The English Woman's Journal* and the British Mid-Nineteenth-Century Woman's Movement," *Woman's Studies*, 34 (2005), pp.133-157; and Sheila Herstein, *A Mid-Victorian Feminist: Barbara Leigh Smith Bodichon* (New Haven: Yale University Press 1985).

[12] Indeed, W.T. Stead says *Blackwood's* was to the quarterlies as "the saucy frigate to the stately three-decker." Stead, "History of Periodicals" (1892), p.7

[13] *Wellesley Index to Victorian Periodicals, 1824-1900*, ed. by Walter E. Houghton, 5 vols (Toronto: University of Toronto Press 1966-1979).

[14] *Poole's Index to Periodical Literature*, ed. by William Frederick Poole, 2 vols (London: Kegan Paul, Tench, Trübner and Co. 1882), also 5 supplements ed. by William Frederick Poole (1888), William I Fletcher (1893), William I. Fletcher and Franklin O. Poole (1897), William I. Fletcher and Mary Poole (1903, 1908) (London: Kegan Paul, Tench, Trübner and Co. 1888-1908).

[15] *Poole's Index Date and Volume Key*, ed. by Marion V. Bell and Jean C. Bacon (Chicago: Association of College and Reference Librarians 1957) and *Cumulative Author Index for Poole's Index to Periodical Literature, 1802-1906*, compiled and ed. by C. Edward Wall (Ann Arbor: Pierian Press 1971).

[16] *19th Century Masterfile* is only accessible through subscribing libraries. See http://poolesplus.odyssi.com/19centWelcome.htm

[17] *Science in the Nineteenth-Century Periodical: An Electronic Index*, v. 1.0, hriOnline http://www.sciper.org

[18] George. H. Lewes, "Studies in Animal Life," *Cornhill Magazine*, 1 (1860), pp.61-74. See also Gowan Dawson, "The *Cornhill Magazine* and shilling monthlies in mid-Victorian Britain," *Science in the Nineteenth-Century Periodical* (Cambridge: Cambridge University Press 2004), pp.123-150 and David Amigoni "Carving Coconuts, the Philosophy of Drawing Rooms, and the Politics of Dates: Grant Allen, Popular Scientific Journalism, Evolution, and Culture in the *Cornhill Magazine*," in *Culture and Science in the Nineteenth-Century Media*, ed. by Louise Henson, Geoffrey Cantor, Gowan Dawson, Richard Noakes, Sally Shuttleworth, and Jonathan R. Topham (London: Ashgate 2004), pp.251-262.

[19] See http://www.galegroup.com/Times/

[20] *Science in the Nineteenth-Century Periodical: An Electronic Index*, especially http://www.sciper.org/policy.html

[21] Suzanne Paylor, 'Scientific Authority and the Democratic Intellect: popular encounters with Darwinian ideas in later nineteenth-century England', (unpublished doctoral thesis, University of York, 2004).

[22] See for instance Roy M. MacLeod, "The Genesis of Nature," (1969), reprinted in *The "Creed of Science" in Victorian England* (Aldershot: Ashgate 2000a), pp.1-28, Gillian Beer, "The *Academy*: Europe in England," in *Science Serialized: Representations of the Sciences in Nineteenth-Century Periodicals*, ed. by Geoffrey Cantor and Sally Shuttleworth (Cambridge, MA: MIT Press 2004) and Laurel Brake, *Subjugated Knowledges: Journalism, Gender and Literature in the Nineteenth Century* (London: Macmillan 1994), pp.36-55, and Gowan Dawson, "Introduction," in *Science in the Nineteenth-Century Periodical: An Electronic Index*, http://www.sciper.org/browse/AC_desc.html

[23] See John Unsworth, 'Second-Generation Digital Resources in the Humanities', (Keynote Speech, Digital Resources in the Humanities 2000, Sheffield, UK), Hhttp://www.iath.virginia.edu/~jmu2m/DRH2000.htmlH and Professor K.I.B. Spärck Jones et al, British Academy Policy Study: Electronic Resources for Research in the Humanities and Social Sciences, (London: British Academy, 2005), see also http://www.britac.ac.uk/reports/eresources/report/index.html

[24] John S. North, "Introduction," in vol.1, *Waterloo Directory of English Newspapers and Periodicals, 1800-1900*, second series, 20 vols, (Waterloo: North Waterloo Academic Press 2003), p.vii

[25] For one such project that seeks to combine scholarly editions in innovative ways see NINES at http://www.nines.org/

[26] For Stead and futurism see Graeme Gooday, "Profit and Prophecy: Electricity in the Late-Victorian Periodical," in *Science in the Nineteenth-Century Periodical* (Cambridge: Cambridge University Press 2004), pp.238-254.

Appendix One: The original template trailed by the team at the start of the project

LEVEL 1
TEMPLATE 1 (Snapshots)

Full Title(s) of Journal	
a. change of title and date of issue seen	
b.	
c.	
[Mergers/Outgrowths/Sister papers]	
[Others in same niche evident from 'address']	
Comments:	
Dates of run (number, month, and year)	
Dates of each issue consulted	

Place of Publication	
Locus of Distribution	
Publisher	
Printer	
Proprietors	
Affiliation/orientation	
Comments:	
Size (in cms)	
Paper: type and condition	
Format (eg. Broadsheet, no of cols)	
Pagination	
Covers?	
Wrapper?	
Advertisements: classified; other	
Comments:	
Masthead? If so, copy	
Other Graphic Devices?	
Comments:	
Frequency/ies (with dates of issues examined)	
Day of week/month issued	
Price(s)	
Stamped?	
Advertised: in *Athenaeum*? In *Times?* Other? If so, copy?	
Comments	
Editor(s)	
Anonymity? Signature?	
Named contributors; pseudonyms; initials	
Comments:	
Layout:	
Titles of articles, headings, sub-headings	

Contents	
Regular sections	
Self-reflexive material: prospectus; editorial; manifesto; mission statement	
Reviews?	
Letters	
Obituaries	
Poetry, Fiction?	
Supplements	
Other?	
Comments:	
Illustrations? Yes No	
Types:	
Number per issue	
Captions	
Artist/illustrators	
Comments:	
Indexes, for bound volumes?	
Bibliography? *Wellesley*, with ref	
Waterloo	
ODNB: names?	
Sullivan	
Other: articles/books?	
Comments:	
General comments:	

Date(s) compiled
Location of Copies consulted
Name of Researcher(s)