# WHAT WOULD DR MURRAY HAVE MADE OF THE OED ONLINE TODAY?

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During the final years of the twentieth century the text of the Oxford English Dictionary (OED) was transformed from a print resource to a digital one. Surprisingly, the way in which data was structured in the print version lent itself fairly easily to this transformation. This paper looks briefly at the publishing history of the OED, and then at continuity and change in editorial policy across the two media, and finally at new options (such as data visualisation through graphs, charts, and animations, as well as linking through to other sources) that are opened to users of the dictionary as a result of its availability as a digital resource. The paper concludes that although Dr Murray, the dictionary's original editor, would have been pleased by the way his text has migrated from the print to the digital medium, the real significance of the development is that the modern user can now begin to analyse language change, and not just the history of individual words, through the functionality of the OED Online web site.

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## 1 DICTIONARIES IN THE NINETEENTH CENTURY: THEIR OBJECTIVES

The public story of the *OED* starts on Bonfire Night, 5 November, 1857. That evening members of the Philological Society met in London to hear one of their colleagues, Richard Chenevix Trench (then Dean of Westminster and subsequently Archbishop of Dublin) present the first of two papers "On Some Deficiencies in our English Dictionaries", a topic which had been discussed in a general way by Society members earlier in the 1856-7 season (Trench 1857). Trench summed up what some of his Society colleagues already knew: that the dictionaries of the day were incomplete. Dictionaries did not necessarily include older words which were vital to a proper understanding of the history of a language; "families" of words were not completed (so that you might find an adjective but not the derived adverb); early usages of individual words were often poorly attested, giving the impression that a term might have emerged much later than it actually did; and (amongst other things) lexicographers did not seek out precise enough information on etymology or definition from the materials at their command.

The issue is complex. Why would publishers want to spend time and resources compiling information which the everyday dictionary user did not need? Would the universities – who had in Britain only comparatively recently accepted English Literature as a valid discipline – plough scarce funds into resourcing this idea? Would anyone be found to take on the job of directing such a project?

The Philological Society did develop the idea. The idea of an "Unregistered Words" committee, which would start to collect material to close gaps in existing dictionaries, was already in the air. A number of the Society's members, including the enthusiastic Frederick Furnivall, were selected to push the new project forward. Gradually James Murray was enticed to become Editor of the so-called *New English Dictionary* (it was officially restyled the *Oxford English Dictionary* after it was completed, in 1933).

The story of James Murray and the struggles and successes of his editorship has been widely told, both by his granddaughter Elisabeth Murray (Murray 1977) and by numerous scholars and writers such as Charlotte Brewer and Simon Winchester (Brewer 2007; Winchester 1998; Winchester 2003). In outline, Murray was encouraged by the Philological Society, and recruited by Oxford University Press in 1879, to edit the proposed dictionary whilst he was still a schoolmaster in Mill Hill, in outer London. He reviewed existing materials collected for the dictionary, and indeed he found "some deficiencies" in these too. But with admirable academic speed and rigour he and his assistants assembled enough information to publish the first instalment (*A* to *ant*) five years later, in 1884. He left schoolmastering behind him to work exclusively on the dictionary, but did not survive to see its completion. He died in 1915, while reviewing the long entry for the verb *to take*, and after the disruptions of the Great War the dictionary was not finally finished, in ten volumes, until 1928. Almost immediately, in 1933, a one-volume supplement was published and the whole work reissued (as the *Oxford English Dictionary*) in thirteen volumes.

Murray worked in an editorial office erected for the dictionary in his back garden in Oxford. In the classic photograph of the old man, taken days before his death by his young grandson, he is surrounded by his dictionary slips or index cards – most of which were sent in to the dictionary staff in Oxford from readers around Britain and further afield. It was these slips which formed the raw material for his magisterial survey of the English language in the *OED*. The dictionary was published in sections – each alphabetical instalment released as it was finished - over 44 years between 1884 and 1928. By the time the dictionary was completed its storehouse amounted to over 5 million quotation slips – small in today's terms, but astounding given the resources and technology of the time.

Murray's dictionary was essentially a dictionary that told the reader about *words*. He wanted to establish the "biography" of each word in the language. Take, for example, this sentence from Samuel Richardson's novel *Clarissa*, published in 1748 (Richardson 1985: 692):

I told the captain that I would not prevent his question; and accordingly, after I had enjoined the strictest secrecy that no advantage might be given to James Harlowe; and which he answered for as well on Mr Harlowe's part as his own; I acknowledged nakedly and fairly the whole truth – To wit, "That we were not yet married."

Murray's dictionary gave the educated reader a resource which would help determine the meaning and history of, for example, "prevent", in the sentence "I would not prevent his question". Nowadays it is normal to talk of preventing someone *from* doing something, and that meaning and syntactic structure has indeed been around since the early seventeenth century. To date, the earliest reference found for preventing someone *from doing* something dates from 1620, in a translation of Boccaccio's *Decameron* (Boccaccio 1620: 203): "To preuent the like heauy doome from falling on her; she studied [...] how to change her hatred into kinde loue."

But – even though it existed in the language at the time – this is not the meaning Richardson used in this passage. We have to look at the other strand of meaning – to "anticipate" or "meet in advance" – in order to understand what the speaker intends with regard to the captain, when he wants to "prevent the question". He wants to render it unnecessary for the captain to ask whether he is married, by *anticipating* the question and answering it in advance.

This now-obsolete meaning is found by the *OED* from 1533: "To anticipate or meet beforehand (a want, desire, objection, question, command, etc.)".

Under Murray's leadership, the *OED* set out to explain the meaning of passed, passing, and current vocabulary, and to do this scientifically and dispassionately, on the basis of the mass of assembled data extracted from historical and modern texts which accrued in the dictionary's offices in Oxford.

Having looked at just one specific example of how the *OED* can start to build a picture of the historical relationship between words and meanings of words in the case of prevent, it is helpful to look at the same issue from a wider perspective and to review a complete entry. By examining what Murray and his colleagues were attempting to do, we can catch glimpses of whether the current work on the revision and update of the dictionary would have met with their approval as well as satisfying the modern requirements of a historical dictionary. The entry now under review is that for the word *restaurant*.

This entry was originally published in the *OED* in 1908. Murray was under strict instructions from his publisher to keep entries are short as reasonably possible,

and so his entry for *restaurant* contains only one main meaning ("an establishment where refreshments or meals may be obtained") and one short section illustrating uses of the word *restaurant* as the initial element of compounds (e.g. *restaurant manager* and *restaurant meal*). The original edition of the dictionary was able to exemplify the earliest use of the word *restaurant* from the writings of James Fenimore Cooper in 1827.

In itself, this was a significant advance on our previous understanding of the term. Murray and his editorial staff and readers had scoured English literature for evidence of the word's usage, and had found it first in the work of an American writer, but they had not labelled the term as of American origin, presumably deciding that the evidence was not conclusive enough to allow them to do this.

Since Murray's day, more work has been conducted on the word *restaurant*, as part of the current project to revise and update comprehensively (and for the first time) the *OED* for its Third Edition. The Second Edition (1989) was essentially the result of a project to digitise the dictionary text and to republish the original text and a four-volume twentieth-century supplement in one sequence, as the beginnings of a new life for the dictionary online.

When we came to revise *restaurant* for the Third Edition of the dictionary, we found it difficult to pin down the first use of the term. First, we discovered a mid eighteenth-century use in Boswell (from his *London Diaries*). But there was such a gap between this and our next reference in the early nineteenth century that we were suspicious – on the principle that an editor should never believe anything until it proves itself to be true through documentary evidence - and we had the manuscript reading checked in Yale. Sure enough the modern editor had altered one French word to another, in order to simplify matters for his readers – and had introduced *restaurant* ahistorically. So we had to reject that potential first use, and recommence our research. We scanned through tourist guides of Paris (remembering that *restaurant* might also be spelt

*restaurat* at the time), and we eventually pinned down a reference from 1806, in a translation of the regulations of the Antwerp Literary Society. The earliest use in the French language was claimed by the sources to date from 1771, so this worked chronologically and as a cultural "fit". As a result of revising and updating the entry we were able to demonstrate that the English word *restaurant* originated in texts describing eating places encountered by Englishspeakers on their travels abroad, in Belgium and France. We could then track the term in early American sources (1821, in the *New-York Evening Post*), before finding it in mainland UK sources from the mid-1820s. Over this early period the spelling of the word begins to settle down, and what evidence there is points to continuing variation in the pronunciation over its two centuries of use.

The revised entry introduces a new syntactic use of *restaurant*, in which it is preceded by a national adjective designating the type of cuisine in which the restaurant specialises (e.g. *Chinese restaurant*, *French restaurant*, etc.). A review of the appearance of *restaurant* in compounds similarly reveals new information, and demonstrates one way in which the revised *OED* is able to handle information without some of the restrictions James Murray was under at the turn of the nineteenth century.

The length of the First Edition of the *OED* was very carefully monitored by its publishers, for whom every extra volume implied additional project time and investment. As a result, Murray attempted to squeeze as much information in as short a space as he could. Traditionally, dictionaries use cryptic abbreviations to save space, and although Murray did not take this to extremes, he was nevertheless faced every day with the need to abridge the length of definitions and etymologies and the number and size of illustrative quotations.

At *restaurant* this led him to adopt the space-saving device of containing all compound uses of the word within a single short paragraph of quotations, which does little more than indicate that such a formation is common and has

been recorded, according to the documentation available to him, since 1875 (*restaurant car*).

"Extent", or the length of a text when published, is a complex issue for digital editions of the *OED*. On the one hand, editors are frequently told that modern computer storage devices remove size restraints, and that editors can therefore publish as much associated material as they wish. On the other hand, Murray would, surely, have been in agreement with today's editors, who recognise that the purpose of their work is to produce a tight summary of the history of each word for the user. If editors were to allow the extent of individual entries to range out of proportion to utility then this would result in making the user's task of interpreting an entry much more difficult.

Although revised and updated entries do not contain an unwarranted amount of additional material, they do increase the size of the text by a (manageable) one hundred per cent. To counteract this, the page or screen layout is simpler. The first Edition of the *OED* tended, as in *restaurant*, to constrict material. Compound uses of a word are framed within large, consolidated blocks of quotations. The modern view is that it is more helpful to the user if this information is presented using more open design principles, and so nowadays many compounds are shown as standalone subentries (micro-entries in their own right), rather than small sparks of information within a forest of largely undifferentiated text. The user of *OED3*, then, can have immediate access to many of these formal compounds, such as *restaurant critic*, and can see without further analysis that it is first recorded in 1922 and that its usage continues up to the present day.

The traditional function of the *OED* and of other historical dictionaries is to explain how words came to mean what they do, and to demonstrate their life histories or biographies from the available evidence. Murray himself was clearly pleased with the scope of his work (Murray 1900: 49):

It is never possible to forecast the needs and notions of those who shall come after

us; but with our present knowledge it is not easy to conceive what new feature can now be added to English Lexicography. At any rate, it can be maintained that in the Oxford dictionary, permeated as it is through and through with the scientific method of the century, Lexicography has for the present reached its supreme development.

This paper now looks at whether the changes which the *OED* has undergone since James Murray's time represent a linear development of his original ideals, with which today's editors might feel he would be comfortable, or whether they take the *OED* into new areas which might cause concern to the first Victorian editor.

#### 2 INTO THE TWENTY-FIRST CENTURY

Updating the *OED* by means of its Supplements in the twentieth century did not represent a sea change in ways of understanding or using the dictionary. New headwords, or new component sub-senses, compounds, derivatives, etc., were added to the existing structure without requiring the basic structure to be questioned.

Ever since dictionaries have been accessible online, new vistas have opened. During the 1980s, the text of the original *OED* (1884-1928) and its four-volume Supplement (1972-86) was keyed on to computer and processed so that it could be accessed as a machine-readable and machine-searchable resource. This was a major change in function, and there was ample scope for problems to arise during this digitisation project.

There *were* difficulties, of course, and the project took over five years to complete. It resulted, paradoxically, in the publication of the Second Edition of the *OED* in *book* form (twenty volumes) in 1989. For the public, this represented an opportunity to consult the dictionary in a single alphabetical sequence, with some new entries and an updated system for transcribing pronunciations. For the publisher and the editors it represented just Phase One

of a much larger project (now in progress) to revise and update the dictionary as a searchable online resource.

It is remarkable that the First Edition of the *OED* migrated relatively easily on to a computational medium. The credit for this should be laid firmly at the doorstep of James Murray, the original editor. His vision for the dictionary, even from the earliest instalments, was of a dictionary that told the life history of a word systematically – in a very structured manner. Other European countries had initiated large national historical dictionaries before the *OED* was envisaged, but they tended to suffer from lack of a tight, coherent structure and from a discursive format. The *OED* was being edited within a publishing company (though this was and is within a major university). Even then this meant that the editors were motivated by tight deadlines and close general monitoring. Murray was surrounded by restrictions and structure wherever he looked, but he thrived in this environment.

The result of this in terms of digitisation was that it was relatively simple to identify discrete information fields in Murray's nineteenth century dictionary which could be transferred – often on a one-to-one basis – on to a tagged database. Some sections (particularly definitions and etymologies) consisted of "free" text, and so were not easily fragmented into components meaningful to a computer, but most of the text was susceptible to mark-up and computational parsing into a structured computer model. This leads to the suspicion that Dr Murray would have been happy with the concept of digitising his text.

Once the basic text of the dictionary had migrated on to a machine-readable platform, new opportunities came into play. At the time this originally became possible, the CD-ROM was the format of choice for researchers using large-text databases. The *OED*, therefore, was published as a CD-ROM in 1992, and this helped to expand users' expectations of what they might achieve with a historical dictionary. Further along the line, editors were able to enhance the tagging of the dictionary: for example, to improve the etymological tagging in

order to highlight specifically from which languages words were borrowed into English over the centuries. Until this was done, any search for e.g. "Italian" in an etymology would result in the user being presented with thousands of entries (specifically, 11,765 entries) in which the term "Italian" (either as an adjective or as a noun) happened to be employed in an etymology. After this preprocessing, it was possible for a comprehensive search of the dictionary to focus on the 2,096 words which the dictionary categorically states entered the English language directly from Italian (*a capella*, *accelerando*, etc.).

There can be little doubt that an editor with an outlook such as James Murray would have appreciated this. In a more recent transformation of the dictionary it has allowed editors and computational colleagues to present an animation by which the borrowing of words into English over the centuries is represented on a two-dimensional map of the world, with the emergence of words being heralded by the equivalent of lights flashing at the place and time of their first recorded appearance. By running such a sequence together, the user is able to receive an immediate visual impression of the expansion of the English language from the Middle Ages to the present day. The animation demonstrates the continued enlargement of English from Romance and Germanic sources into the Middle Ages; the first traces of words arriving in English in the Early Modern period as a result of travel, trade, and exploration, and the development of this into the expansionism of empire; and eventually the gradual reduction of the number of new items as a result of borrowing that is a feature of our modern language. From what evidence there is of Murray illustrating language features through diagrams there is a strong suggestion that he would have been fascinated by the uses to which his original data is now being put.

#### **3 STANDARDS**

In a digital age, it is possible for editors to become distracted by the options available by means of new media. On the one hand, these are nowadays vital ingredients to the mix of online dictionaries, but on the other, the editors should always remember that astounding technology is no assistance to the dictionary if the basic data content is compromised.

This is a standpoint Dr Murray would have recognised. He and his editorial assistants were generally operating in an environment which seems today to have been devoid of technological advances, and their objectives were simply to produce the best dictionary text that they could. Doubtless the situation was not as simple as this, as competing priorities would have been pulling both editors and publishers in several directions, but underneath all this was a desire for elegant accuracy and completeness.

Despite competing priorities in the early twentieth century, the editorial and publishing intention is that the quality of work does not suffer. At the very heart of the enterprise the ideals of the dictionary's editors today and in the past are inextricably linked through a dedication to editorial standards: bibliographical, etymological, and in terms of definition, pronunciation, lexical commentary, etc. One of Dr Murray's solutions to the issue of competing resources was to argue for more time to complete the work. The Oxford University Press did not take on the project in 1879 expecting an extensive multi-volume dictionary, but as this became a reality the quality of the text still remained the highest priority. Similar concerns have been discussed in the recent past, with an early completion date of 2005 giving way to 2010 (thanks largely to the availability of so much modern and historical lexical data through the Internet). At present the dictionary is perhaps moving towards a publishing model of continuous update without such a clearly phased project structure, in keeping with other web-derived models.

#### **4 THE MODERN EDITORIAL ENVIRONMENT**

In the year 2000 the Oxford University Press started publishing an updated and revised version of the *OED*, in its Third Edition. This is the first root-and-branch revision that the *OED* has undergone since it was originally written

between 1884 and 1928. Editors are currently almost 40% of the way through the project. The editorial staff currently numbers about the 75 editors, principally in Oxford but with editorial work also conducted in New York and elsewhere around the world.

With the publication of the OED on CD-ROM and then online, the "centre of gravity" of the dictionary became the machine-readable text. Whether there is ever to be another printed edition will doubtless depend upon whether there is a demand for the text in this format when the Third Edition becomes available. Maybe Dr Murray would have lamented this, but it would be wrong to attribute early twenty-first century sentimentalism to him. He was above all a practical visionary, and would have wanted to see his work available in the new media to which it was so suited both structurally and in terms of content.

#### **5 TWENTY-FIRST CENTURY EDITORIAL HABITS**

The objectives of today's editors coincide in many ways precisely with those of the original Victorian editors of the *OED* in most editorial areas. Today's editors have access to so much more data, through massive historical text corpora and by virtue of complex computational search and analysis routines, that James Murray and his colleagues would have been astounded when first introduced to the array of advances that editors nowadays take for granted. But they would instantly recognise the type of work currently being done in updating their text (and in the process doubling its size while retaining tight control over the entries).

The continuity of editorial philosophy over the publication history of the *OED* can be seen by examining in some detail the lexical history of particular words. An excellent example of this is the word *culture*. The philosophy involves an assumption that – if enough historical lexical data is observed – the emergence of words and their development within a language will follow a logical pattern and that words will arise from, interact with, and mutate within the culture and

society by which they are used. Words will not (generally) alter cultures, but will rapidly reflect changes in the culture(s) to which they belong.

The word *culture* entered English, according to the records, in the late medieval period (the first reference in English is dated *c*1450). The *OED*'s etymology notes that the word was borrowed both directly from Anglo-Norman and Middle French *culture*, and also from classical Latin *cultūra* (from which French itself derived), or (and this is perhaps more likely) from a mixture of both sources over time. Borrowing is not a single explosive event, but often happens over a long period, and so might involve numerous related languages rather than just one.

Is it surprising that *culture* is not recorded in English before the middle of the fifteenth century? Or is it safe to assume this was a logical time for the word to arise? A Latin/French (Romance) word is very unlikely to have been used in English in the Old English (Anglo-Saxon) period, before the Norman Conquest, when the vocabulary of English was largely Germanic. Arguably *culture* might have occurred before 1450 (and indeed it may have existed outside the surviving written record), but perhaps the peasant occupation of cultivating the soil did not attract a Romance description till late in the medieval period. Until then, the concept of "cultivation" was well covered by earlier Germanic words such as *tilth* and *earth-tilth* (Old English), *tilling* (?c1225) and *land-tilling* (c1420), and *delving* (1377) (see the *Historical Thesaurus of the OED*, which forms part of the *OED Online*).

Lexicographers are trained to look for specific features at the point of transmission of a word from one language to another. According to the dictionary's philosophy we should expect (at least approximate) identity of form and pronunciation at the cross-over point and that the borrowed meaning should pre-exist in the donor language. We would expect some geographical or cultural reason for the transmission, and an explanation if any of these and other characteristics are absent. A review of the documentary evidence and

social context of the period shows that these conditions are met in the case of *culture*.

There is very unlikely to be a single point of transmission. Word borrowing occurs over time, and sometimes over centuries, as new meanings are borrowed at different times. As implied earlier, the *OED*'s philosophy of language looks to long-term inter-relationships between languages (and their accompanying cultures) rather than single explosive interaction.

After amassing and sorting the available materials for the word *culture*, it is possible to determine that the semantic development moves (as can be expected) in short logical steps. The basic meaning of the word in English (and this meaning was current in the donor languages) concerns the cultivation of the soil. By a small semantic shift it develops a new sense one hundred years later (1580 or so): the cultivation of crops. Slightly later a further related sense becomes apparent – the cultivation of animals. Another shift several centuries later takes *culture* into the realm of the artificial propagation of microorganisms (1880 onwards). This last shift coincides in time with the emergence of scientific research into microorganisms (the word itself dates from 1880). Social and cultural change and the language used to describe it often walk hand in hand.

Another branch of the "genealogical tree" of *culture* takes the word in a different direction. From a starting-point of "cultivation of the soil" (a late medieval sense) it develops yet another new strand of meaning: the cultivation of the mind (from the early sixteenth century) and, later still, refinement of the mind.

Each time a single attribute or feature of the word changes. It is (theoretically) a necessary condition that the base meaning predates an extended meaning, as is the case here. If evidence for this is lacking, then the lexicographer needs to examine the reasons for the disjunction. The reasons may be evidentiary or cultural/social, or may demonstrate semantic activity in another language before a term emerges in English.

Once *culture* has leapt away from agriculture and husbandry, it is on the open road for development in the "social custom" sense familiar today. Curiously this development, in the mid nineteenth century, involves the influence of German *Kultur*. The word had undergone its own semantic changes in Germany over the previous hundred years, and their reborrowing into English helps to explain a semantic change which would otherwise represent a logical disjunction.

This form of progression is apparent in almost any word in the language, and the dictionary's philosophy has been developed to accommodate it. The editor – whether in the late nineteenth century under the tutelage of James Murray, or today – has to appreciate and understand continuity and (sometimes) documentary disjunction along this timeline.

#### **6 THE NETWORK OF LANGUAGE**

Whereas in the past technology conspired to direct people specifically to the historical and contemporary details of *individual* words, nowadays it is considerably easier to broaden the focus to examine the individual term *and* its place within the language – and hence within society and national cultures generally.

One of the major changes in the *OED* over the past few years has been the interaction online between the dictionary's text and the *Historical Thesaurus of the OED*. The Historical Thesaurus was a project initiated by Professor Michael Samuels within the English department at the University of Glasgow in 1964. Like the original *OED* it was an ambitious project. The idea of writing out on index cards almost all of the definitions in the *OED*, along with their dates of first use, and then reordering those cards into a thesaurus sequence is almost as far-fetched as trying to describe historically all (or almost all) of the words and meanings found in a language over the centuries, as in the *OED*. But fortunately both projects have thrived and are producing remarkable results.

The nineteenth century was an era in which the concept of the thesaurus was highly regarded, especially as a stepping stone to integrating knowledge. There is every reason to assume that Dr Murray would have been thoroughly in favour of this development of the dictionary.

The print version of the *Historical Thesaurus of the OED* was published in two volumes by Oxford University Press in 2009. Since then, it has been embedded within the OED Online web site, so that when examining a particular word or sense of a word, the user can link to semantic parallels through the historical thesaurus.

*Culture* offers a good example word to review in terms of the dictionarythesaurus link online. But instead of looking at the meanings and quotations of the word, which would have been the main lookup point when the entry was originally compiled in 1893, it is now possible to click on a link at each definition, and to arrive at a list of other terms with largely the same meaning from other centuries. This offers a remarkable new avenue for lexical research.

Links available from the first sense ("cultivation of the soil") include (as we have seen earlier): *earth-tilth* (Old English), *delving* (1377-), *labouring* (1523-), *manurance* (1572), *agriculture*, *gainage*, and several more. Moving to the second main meaning ("cultivation of plants and crops") the user discovers: *governail* (c1475-), *elevation* (1658-), *rearing* (1693-), *growing* (1889-), etc. The much later biological use has parallels in: *plate cultivation* (1886-), *subculturing* (1899-), *explantation* (1915-), *replica plating* (1952-), etc. Each of these links opens up new vistas and questions for research.

It is relatively simple nowadays to examine parallel word-formations. Many terms make use of the final word-element *culture*. The *OED* reminds users of these: *agriculture* (?c1440-), *horticulture* (1678-), *pisciculture* (1807-), *floriculture* (1822-), and some fifty more. Then it is possible to review *culture* as an emerging final element in compounds: *blood culture* (1881-), *bee culture* (1882-), *beauty culture* (1909-), *blade culture* (1943-), *adversary culture* 

(1965-), and another hundred more. On encountering each of these terms, the user should always ask "when?" and "why?", and then follow that up with "where from?" and "how?" Even then, these are only the initial questions. Similar searches can be run on derivatives, and after a short session it is possible for the user today to assemble a "profile" of the word *culture* (or any other word consulted) which is far more comprehensive and suggestive than would have been possible when the dictionary was first available. Every word is the starting point for further investigation and exploration.

The *OED* now also offers additional options, both inside the dictionary and outside it. It provides links through to bibliographical and biographical sources (the *Oxford Dictionary of National Biography* – as many of the quoted authors appear here; the digital versions of the *Dictionary of Old English* and the *Middle English Dictionary*, through complementary arrangements with their editors and publishers); texts accessible on the Internet Archive and elsewhere which enhance the user's understanding of a term and surrounding concepts.

A primary area of expected development for the OED Online in the future concerns "visualisation" – the ability to view data in new ways, and specifically in ways which either allow the user to understand the information locked in the dictionary more easily, or provoke the user to ask questions of the data which he or she might not have been in a position to ask previously.

One mechanism already in place which facilitates this is the "timeline". A link from the home page introduces the user to a section of the site in which it is possible to choose to see specific data presented graphically rather than in words. The profile of the graphs encountered can often cause us to ask further questions of the data.

One excellent example comes from the realm of etymology and "language of origin". In earlier machine-readable versions of the *OED* it was possible for the user to obtain a listing of all words in the dictionary from Japanese. Nowadays it is possible to click down a menu of language families to find "Japanese", and

on activating this link to receive a bar-chart representation of the appearance of Japanese words in English, ranged by time on the *x*-axis (by default, fifty year intervals from 1000 AD) and by quantity (number of words) on the *y*-axis.

In the case of Japanese, it is arresting that there is no evidence for the occurrence of Japanese words in English before the period 1550-1600. The borrowing of words from one language to another involves cultural and lexical interchange, and links between east and west at that early time were apparently not strong enough to support borrowing in such a way that it has been recorded in the surviving literature. Looking ahead, the user notices a low level of borrowing from Japanese into English until 1700, and in the period 1700-50 something of an acceleration of word-borrowing. Closer inspection, however (by redrawing the chart automatically over ten-year intervals), shows that this acceleration happened only in 1720-30, which is most peculiar. Even closer examination of this sub-set of results shows that this spike derives from words included in a single book – itself ultimately a translation from a German text. The earliest words borrowed into English from Japanese in the sixteenth and seventeenth centuries relate especially to the sort of objects and sights which would have been familiar to travels to Japan from the west (the katana or Samurai sword; oban or gold coin; tatami or straw mat). In the late seventeenth and eighteenth centuries Japan was more or less a closed community as far as the west was concerned, and so at this point the chart shows little or no borrowing.

The situation, however, changes gradually as the time axis moves into the nineteenth century. By clicking on the bars of the chart, it is possible to see which words fall into this time category. The user observes a change in type. Ceremonial or everyday objects increase in number significantly, as do those terms relating to art (including the martial arts). The European fascination with Eastern art in the later nineteenth century and beyond manifests itself in the vocabulary that makes its way into English (including *baren* – a pad used in wood-block printing; *go*, the board game of territorial possession, *habutai*, a

fine soft Japanese silk; etc.). Later still a few scientific terms are in evidence, before the chart shows a sharp diminution in borrowing in the twenty-first century.

These charts encourage the user to compare the differing profiles of languages. Some languages (such as Chinese) have profiles similar to that of Japan – and for similar reasons. Others, such as the European languages from which English has grown or borrowed from the early times, show a far fuller profile. But the same points of interest arise here as in the case of Japanese or Chinese: how did the types of words borrowed change over the centuries, and what might be the reasons for these changes? The reasons normally relate to society and cultural shifts happening in the homelands of the English-speaking people at the time.

The visualisation charts are not restricted to languages. It is possible to examine the charts by subject discipline (politics, cookery, football, etc.) to discover new profiles and new stories about the changing face of the English language. The chart for "Food and Cooking" contains entries from 1000 AD onwards, but only by examining the individual entries brought together under this chart is it possible to tease out the periods at which different cuisines held sway in the kitchens and restaurants of the English-speaking world.

#### 7 CONCLUSION

The concept of whether the first editor of the *Oxford English Dictionary* would approve of what editors are currently doing is of course entirely irrelevant as far as modern scholarship is concerned. But one of the aspects of *OED* lexicography is its sense of historical continuity. Clearly this is paramount in the dictionary's editorial philosophy, but there remains some vestigial significance in editorial continuity: the fact that over the one hundred and fifty years of the dictionary's life each generation of editors has known and learnt from the previous one. Dr Murray was well acquainted with, for example, Frederick Furnivall of the old Philological Society days; Murray worked alongside his co-editors Henry Bradley, William Craigie, and C. T. Onions; Robert Burchfield was a Fellow of Magdalen College, Oxford at the same time as C. T. Onions (then the College's librarian); and the editors of the Second and Third Editions of the dictionary worked with Robert Burchfield into the 1980s.

The content of the dictionary has undergone significant changes since those early days of the late nineteenth century, but the editorial philosophy remains constant. The structure to which new information is added today is in essence the structure designed by James Murray and his colleagues over one hundred vears ago. The way in which the dictionary's information is presented on the page has changed slightly, but the principal change and enhancement to the dictionary – which started to happen in the 1980s and continues its evolution today - is the shift from being a print resource to being a digital one. The new medium preserves the advantages of the print-based system (though early users felt that it was less easy to browse serendipitously through the text). But the new medium also offers much more than the old both in a linear sense and three-dimensionally. Editors are no longer restricted to working in alphabetical order, as entries can be updated and published in any sequence; they are able to expand (and on occasions contract) entries to demonstrate their "profile" in the language; and they are able to standardise the accompanying editorial apparatus (abbreviations, short titles, etc.), thus allowing for more precise searching.

But perhaps the principal benefit of the digital medium – as yet only incompletely realised – is that users are no longer constrained by the page, but can enter the digital dictionary at one place (not necessarily alphabetical) and can continue along a journey from point to point accumulating information both about the language, and also about the world in which that language resides. Whether it matters or not, Dr Murray would, I'm sure, have been delighted.

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### KAJ BI SI DR. MURRAY MISLIL O DANAŠNJI SPLETNI RAZLIČICI SLOVARJA OXFORD ENGLISH DICTIONARY?

V zadnjih letih 20. stoletja je bila vsebina slovarja Oxford English Dictionary (OED) prenesena iz tiskanega v digitalni medij. Pri tem je bilo presenetljivo to, da je bil prenos zaradi strukturiranosti podatkov v tiskani različici dokaj enostaven. Prispevek v prvem delu ponuja pregled zgodovine izdaj slovarja OED, predstavlja uredniško delo v obeh medijih in spremembe, do katerih je prišlo zaradi njegove zamenjave. Nadaljevanje prispevka je posvečeno pregledu novih možnosti, ki jih slovar v digitalni obliki ponuja svojim uporabnikom; mednje sodijo vizualizacija podatkov z grafi, diagrami in animacijami, pa tudi povezovanje slovarskih informacij z drugimi viri. Avtor sklene, da bi bil dr. Murray, prvotni urednik slovarja, gotovo vesel prenosa slovarja iz tiskanega v digitalni medij, vendar pa je najpomembnejša posledica tega napredka v prikazovanju slovarske vsebina ta, da sodobnim uporabnikom poleg analize zgodovine posameznih besed omogoča tudi opazovanje jezikovnih sprememb.

Ključne besede: slovar, spletna različica slovarja, digitalni medij, različni načini vizualizacije podatkov, jezik

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