Contextualised dictionary literacy, information literacy, and information behaviour in the e-environment

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Abstract
Purpose – Needs for information literacy, disparities in society, bridging digital divides, richness of information sources in electronic (e-) environments and the value of dictionaries have often been propagated. To improve information sources and information literacy training, information behaviour must be understood (i.e., all information activities). This paper conceptualises new opportunities for information sources (e.g., electronic dictionaries) to all society sectors, dictionary literacy and research lenses such as lexicography to supplement information literacy and behaviour research.
Approach – A scoping review of information literacy and behaviour, lexicography and dictionary literature grounds the conceptualisation of dictionary literacy, its alignment with information literacy, information activities and information behaviour and lexicography as additional research lens.
Findings – Research lenses must acknowledge dictionary use in e-environments, information activities and skills, meanings of information and dictionary literacy, the value of e-dictionaries, alignment with information behaviour research that guides the development of information sources and interdisciplinary research from e.g., lexicography – thus contextualisation.
Originality – Large bodies of literature on information behaviour and lexicography individually do not cover combined insights from both.
Research implications – Information behaviour and information literacy research can be enriched by lexicography as research lens. Further conceptualisation could align information behaviour, information literacy and dictionary literacy.
Practical implications – Dictionary training, aligned with information literacy training, can be informed by this paper.
Social implications: The value of dictionary literacy for all sectors of societies can be improved.
Keywords: Contextualisation, dictionary literacy, information literacy, information behaviour, e-lexicography, impactful research, information behaviour, information seeking and searching
Classification: Conceptual paper

1. Introduction

Calls to address information literacy across all levels and contexts of society have been echoed over many decades. Early work dates back to Zurkoswki who is believed to have coined the term in 1974 (Behrens, 1994), calls for the need for academic information literacy to be fully embedded in subject discipline curricula (Behrens 1994) and others such as Julien *et al* (2020), Gregory and Higgins (2013) and Taylor and Jaeger (2021) who wrote books on both the importance of information literacy and the 'how-to' teach, embed and assess it. Such calls were echoed globally in affluent as well as developing countries. Burnett and White (2022), De Jager and Nassimbeni (2007), Fourie and Krauss (2011), Oshiro (2008) and Webber *et al*. (2005) are good examples. In the South African contexts, Peter Lor (2018; Britz and Lor, 2010) expressed concerns for South Africa as well as globally.

Over the last two decades, discussions of information literacy became more sophisticated, aligned with technological developments and pedagogical theories (Jacobs, 2008; Swanson, 2004). Leading scholars have argued for information literacy training and research to be better informed by research in

information behaviour, e.g., Limberg and Sundin (2006) and Shenton and Hay-Gibson (2011). Technological developments offered many opportunities for expanding information use in electronic (e-) environments as well as specific information sources such as electronic (e)-dictionaries. Opportunities for access to information sources and to address marginalisation and digital divide concerns opened up (Bornman, 2016). That, however, also raised the need to (re)consider scholarly interpretations of research foci, inter-, cross- and transdisciplinary research and contextualisation of such research to specific communities and their needs, e.g.**,** the use of e-dictionaries by students or professional workers and subject experts – or as part of everyday-life information needs. Boonmoh (2012), e.g., did research on students' use of e-dictionaries. Many other questions arise, e.g.**,** how can information behaviour research inform research on e-dictionaries and dictionary skills or vice versa, how can such work extend interpretations of information behaviour and the disciplinary expertise influencing research in information behaviour? How can research in lexicography inform information behaviour research? How can contextual awareness (i.e., how, where, and when dictionaries are used, as well as the context of the word or phrase in a text) expand alliance between dictionary literacy/ information literacy/ information behaviour (and practice) to the benefit of societal challenges such as marginalisation and the digital divide?

Our question was:

> How can research foci and priorities where lexicography informs information behaviour research and choices for extended cross-disciplinary research be explored?

For purposes of this paper, we will focus only on the importance of e-dictionaries, the meanings of information literacy and dictionary literacy, the complexity of e-dictionary literacy, the recognition of the importance of context in using dictionaries from an information behaviour perspective, examples of the use of dictionaries, and taking into account both the context of the user and the context in which the specific word or phrase occurs in a text, as well as the skills needed.

2. Objectives

This paper intends to raise awareness of how influences in extending e-environments and new forms of information sources, e.g., e-dictionaries with extended features, necessitates reconsideration of disciplinary alliances to information behaviour and information literacy research and the (re)conceptualisation of information behaviour and information literacy to accommodate dictionary literacy as a core skill and activity in everyday-life and workplace. It will:

- Sketch core concepts (i.e., information literacy, dictionary literacy, information behaviour)
- Contextualise the use of e-dictionaries from lexicography and information behaviour lenses.
- Contextualise the need for lexicography research to inform the understanding of information behaviour that informs information and dictionary literacy training.

3. Methodology: reflection based on scoping literature review

This paper is based on a scoping review of information literacy and information behaviour, lexicography and dictionary literature that grounds the conceptualisation of dictionary literacy, its alignment with information literacy, information activities and information behaviour, and contextualisation and the value of lexicography as additional research lens to studies of information behaviour. The intention was not a systematic review and sources were handpicked for discussion.

4. Clarification of key concepts: dictionaries, dictionary literacy, contextualisation and information behaviour

4.1 Dictionaries

Dictionaries are important, authoritative sources of information used to fulfil everyday life needs to understand words, their spelling, use and origin as well as to fulfil sophisticated subject-specific needs. Examples include the *Oxford English Dictionary* (OED) (Oxford University Press, 2023), which is the definitive record of the English language over a thousand years (and similar dictionaries for many languages, such as the *Woordenboek der Nederlandsche Taal* (Instituut voor de Nederlandse Taal, 2023), *Deutsches Wörterbuch* (Berlin-Brandenburgischen Akademie der Wissenschaften), *Dictionnaire de l'Académie française* (Académie Française, 2023)), and subject-specific dictionaries, such as *Black's Law Dictionary* (Garner, 2019), *Stedman's Medical Dictionary* (Stedman, 2005), etc. There are also many dictionaries for specific purposes, for example, learner's dictionaries, aimed at learners of a language, such as the *Oxford Learner's Dictionaries* (2023) etc.

The importance of dictionaries and the value that library collections, holding dictionaries as reference works, can offer to communities is widely argued in the literature on reference work and services (Cassell & Hiremath, 2018; Ball & Bothma, 2018). E-dictionaries opened access to larger communities and the need to require the skills to use dictionaries and in particularly e-dictionaries. Dictionaries are core to our understanding of the meaning of words. Dictionary literacy, and more specifically e-dictionary literacy, is essential to use dictionaries effectively.

4.2 Information and dictionary literacy

Dictionary literacy aligns to information literacy, and the use of dictionaries and applying appropriate skills in using dictionaries, aligns with information behaviour. We are thus first considering interpretations of information literacy before defining dictionary literacy. Many definitions of information literacy have been proposed stressing core characteristics and requirements for information literacy such as a recent definition by the Charted Institute of Library and Information Professionals (CILIP) (Secker, 2018) and as reflected in historic reviews (Sample, 2020). For this paper the CILIP interpretation is accepted: 'Information literacy is the ability to think critically and make balanced judgements about any information we find and use. It empowers us as citizens to develop informed views and to engage fully with society'. We can extend this interpretation to types of literacies that aligns closely with it, such as media literacy, computer literacy, digital literacy, data literacy, visual literacy, numeracy and dictionary literacy or to include recent work by Kuehn (2023) on the information ecosystem concept in information literacy. Such extensions fall outside the scope of this paper. Dictionary literacy, in the broadest sense of the word, implies the knowledge about and understanding of the principles of dictionary use, as well as of the specific dictionary the user intends using. It implies, first of all, the selection of the correct dictionary for a specific information need, i.e., a dictionary fit for purpose. For effective use, the user should understand the structure of the dictionary; this is typically explained in the front matter and/or back matter of the dictionary. This includes the access method to the content of the dictionary, be this alphabetic, thematic etc. Furthermore, the user should understand the structure of dictionary articles (how the information about the word is organised), as well as any abbreviations and labels used in the dictionary. For more details, see, *inter alia*, Chi (1998), Gouws (1989), Gouws and Prinsloo (2010) and Nesi (1999). In the e-environment, the user should also understand the search functionalities of the dictionary, and which features are available in the specific dictionary, such as truncation, wild cards, auto-complete etc. It is evident that many of the search functionalities are identical to standard search functions in the e-environment; see, *inter alia*, Lew (2011, 2013a, 2013b), Tarp and Gouws (2020). Dictionary literacy further implies that the user should be able to evaluate the information that it is retrieved. Dictionary information is obviously curated – the lexicographer carefully selected all the information that is included in the dictionary, and, in the case of

a reputable dictionary, the information is accurate (contrary to the problems of misinformation and disinformation in many other e-environments). The user should nevertheless still evaluate the information that is found, viz. which of the often multiple, options is correct in a given situation, either in understanding a text, or in writing a text. The responsibility of selecting the correct word and the correct meaning or sense of a word therefore still rests with the user – the user has to 'apply their mind' to select the correct item in context from all the potentially correct items. This paper focuses solely on the dictionary literacy skills required when reading a text. As such, it addresses only one aspect of dictionary literacy, viz. text reception, understanding the meaning of a word within its context when reading a text. Text reception and text production are aspects of the communicative function in the Function Theory of Lexicography, as discussed in Tarp (2008); also see various chapters in Fuertes-Olivera and Bergenholtz (2011) and in Fuertes-Olivera (2018) and Bothma (2018), and the references in these sources.

Contextualisation is clearly of essence in the use of e-dictionaries – both the context of the user and the context in which meaning is assigned to a specific word, both when writing a text or reading a text; see, *inter alia*, Bothma and Gouws (2020, 2022), Tarp and Gouws (2019, 2020).

4.3 Context and contextualisation

The importance of context and contextualisation is widely noted in information behaviour research e.g.**,** Agarwal (2018) arguing that different interpretations of contexts offered by scholars such as Dervin and Courtright can all hold value and be true since it depends on how you look at it. For Wilson (2022, p.16) context is the situation in which an information need arises. It is determined by the life-world of people, the multiple realities they experience in that life-world, and its spatial structure. This is the context the person brings to the situation in themselves, which Schutz (as cited by Wilson) terms the 'biographically determined situation', which is 'the sedimentation of all of man's previous experiences, organized in the habitual possession of his stock of knowledge, at hand, and as such is his unique possession, given to him and him alone'. This interpretation guides the contextualised examples when a user reads a text and has to understand the meaning of a word in context that we offer later in this paper.

4.4 Information behaviour

Information behaviour is an encompassing concept for all information activities. It 'refers to all information-related activities and encounters, including information seeking, information searching, browsing, recognising and expressing information needs, information encountering, information avoidance and information use' (Fourie and Julien, 2015). It can accommodate the application of information literacy skills – also if information literacy is accepted as an information practice (Lloyd 2010).

5 Examples of the use of e-dictionaries

The following examples illustrate the principles discussed in the previous sections. The examples describe what happens with three pop-up dictionary windows when looking for information: (i) a dictionary article, (ii) translation, and (iii) Wikipedia. Three examples will suffice. The words and phrases that are used as examples are: 'fly' from the phrase 'do battle with some very fly people', 'bunnets' from the phrase 'three old men, all wearing flat bunnets' and all four nouns from the phrase 'lightskirts, coney-catchers, pick-pockets and masterless men'. The examples are explained in 5.1 – 5.3.

The examples illustrate that a reader can decide to ignore a specific information need, that they can select to satisfy the information need by reading a dictionary article, or, if the dictionary article does not provide the required answer, how the reader can follow up on the information need by consulting other

information sources. In each case, the reader is fully in control of the process – they can at any stage decide to abandon the quest for the relevant information, or decide to follow up until the information need is satisfied, or their curiosity (also representing an information need) is satisfied. The reader is furthermore in control of the amount of information to which they are exposed – if they become overwhelmed by the information overload, the quest can easily be abandoned. From the examples it is also clear that the reader consistently has to use their critical thinking skills by evaluating the information presented to them – the reader therefore has to consistently apply their mind to ensure that the information they accept as correct, is actually correct in the context of the sentence and situation and context in the text they are reading.

The examples in 5.1 – 5.3 are taken from novels that are available from Amazon on the Kindle app on an iPad. The English texts in the Kindle are linked to an English monolingual dictionary, *The Oxford Dictionary of English* (Oxford University Press 2023).

Non-English texts can be linked to any of a number of monolingual dictionaries that can be downloaded free of charge. By clicking on a word in the text, three pop-up windows are opened, one with the first few lines of a dictionary article, the second with a link to Wikipedia, and the third with an option to translate the word to a language selected by the user. The Wikipedia and translation windows are only available if the reader is online. The examples are discussed from a lexicographic perspective.

(i) Dictionary article

Clicking on a word in the text shows, in the dictionary pop-up window, the first few lines of the first lemma in the dictionary that corresponds to the word in the text, and provides a link to the full dictionary article. The dictionary that is currently the default dictionary is specified at the left bottom of the dictionary pop-up window; in all the examples that follow, the default dictionary is used, viz. 'English (UK)'. By clicking on 'English (UK)' the reader can select another English dictionary, 'English (US)', or any of a number of bilingual dictionaries, e.g. 'English-Arabic', 'English-German', 'English-Hindi' etc. (which can be downloaded free of charge, as stated earlier). The linking between the English text and the specified English monolingual dictionary is usually very accurate, but sometimes it is incorrect. A detailed discussion of the nature of the problems with linking in English texts is given in Bothma and Prinsloo (2013). Typical problems include the linking to the incorrect lemma or part of speech, problems with homographs, compounds and phrases, etc. If a non-English word occurs in an English text, the user can specify any monolingual or bilingual dictionary which should be accessed, provided the user has downloaded the specific dictionary.

(ii) Wikipedia

In the Wikipedia pop-up window, the first few lines of a relevant article from Wikipedia are displayed with a link to the full Wikipedia entry, provided where there is an article in Wikipedia dealing with the topic. The user has the option to read this information, if it is relevant to their information need. This implies that the user has to evaluate to what extent the Wikipedia information is, or could be, relevant to solving their information need, or whether this information could simply lead to irrelevant information or information overload.

(iii) Translation

The word, phrase or sentence which the reader selects is translated by Bing Translator (which is the only option provided in the Kindle app) in the translation pop-up window to the language the reader specifies and which is supported by Bing Translator. If the word or phrase in the text is not in English, the system

automatically detects the language and translates the foreign language word / phrase into English (or another language specified by the user).

All three pop-up windows, i.e., features, are very useful for a reader that requires the meaning for a word which they don't know (dictionary window), or facts, such as a historical description they would like to ascertain (Wikipedia window), or words or sentences in a language which is not the primary language of the text, and which the user does not understand (translation window). This paper focuses primarily on the dictionary window.

5.1 Example 1: 'Fly'

In the phrase 'do battle with some very fly people', the meaning of 'fly' could possibly be deduced from the context, but it is not necessarily very likely that a non-mother tongue speaker of English would know the exact meaning in context. By clicking on the word, a pop-up window appears (as in Figure 1), which provides an extract from the article 'fly'. The reader needs some grammatical literacy, to understand that 'fly' as verb cannot be correct in context, as it is evidently, in the context of the phrase, an adjective. (It is to be noted that the linking to Wikipedia is also incorrect, as the article starts with 'Flies are insects…'.) The reader then has the option to go to the dictionary by clicking on the button at the bottom of the dictionary pop-up window. This takes them to the dictionary entry for '**fly**^{1} **v.**', which, as stated, is evidently incorrect. Scrolling to the next page in the dictionary provides an entry for the noun of the same lemma, which is evidently also not correct in context. On the next page, '**fly**^{2} **n.**' occurs, and this refers to the insect, which is also not applicable.

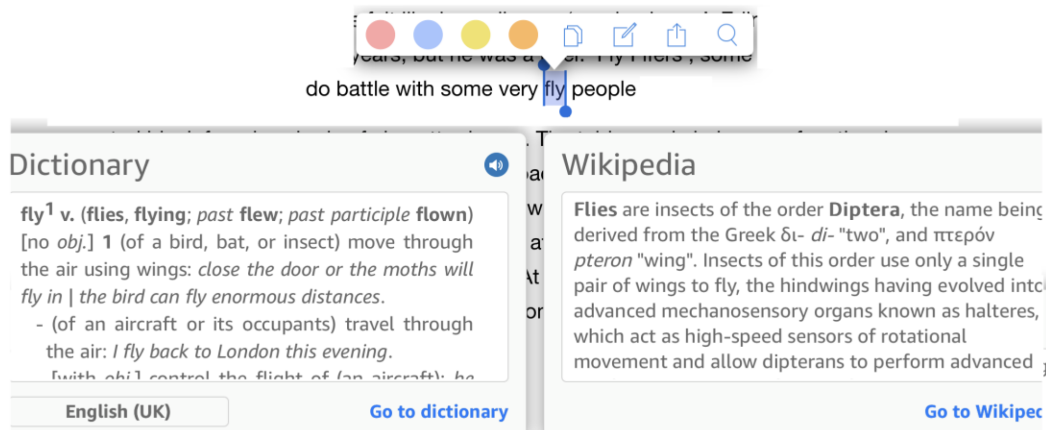

Figure 1: Clicking on the word 'fly' in a text on the Kindle app on an iPad results in the two pop-up windows (and a translation window which is not shown)

Scrolling further down, the reader finds "**fly**^{3} **adj.**" (as in Figure 2).

fly^{3} ***adj.*** (**flyer**, **flyest**) INFORMAL **1** BRITISH knowing and clever: *she's fly enough not to get tricked out of it.*
2 NORTH AMERICAN fashionably attractive and impressive: *a fly dude.*
<DERIVATIVES> flyness *n.*
<ORIGIN> early 19th century: of unknown origin.

Figure 2: The dictionary entry for '**fly**^{3} **adj.**' in the linked dictionary on the Kindle app on an iPad

Two widely divergent possible meanings are offered, one British, the other North American that could again provide a clue, but, if the reader knows that the text is situated in Edinburgh, Scotland, it is evident that the first meaning is correct. From this example, it is evident that the reader had various options in terms of their information behaviour if they were not confident of the meaning of the word as part of a phrase in a specific context. They could ignore the information need (a typical information behaviour as reported by studies discussed in Case and Given [2016]) (i.e., the need to understand what the word, 'fly', means in this context), or they could try to solve the information need (involving a variety of typical information literacy skills and information activities [i.e., information behaviour]). If they chose the latter, they were required to have a fair amount of dictionary literacy (as well as know the context that the novel is set in the UK), viz. to understand the layout and significance of the numbers after the lemma, the various abbreviations (v., n., adj.) used in the dictionary and the labels used with the different entries ('informal, British, North American'), as well as grammatical literacy to understand that 'fly' in context is an adjective. (If they did not know this, they could have wasted a considerable amount of time by reading through the articles for fly[1] and fly[2].)

5.2 Example 2: 'Bunnets'

In the phrase 'three old men, all wearing flat bunnets', the word 'bunnets' may not be well-known. Clicking on 'bunnet' unfortunately does not provide any help – no definition is found (i.e., the word does not occur in the linked dictionary), there is no link to a Wikipedia article, and no translation equivalent is offered. The reader therefore has no choice but to explore further. If no dictionary article is available, the system provides the option of doing a Google search. The word is automatically passed to the Google search bar, and the search is carried out. In this case, as is illustrated in Figure 3, Google queried whether the reader actually wanted to search for 'bonnets', and provides the meaning for 'bonnets', viz., 'a woman's or child's hat tied under the chin with a brim framing the face" (from Oxford Languages), which is evidently not valid in this case, as 'men' are explicitly mentioned. However, there is a note, indicating that 'bonnet' has a variant in Scottish, viz. 'bunnets, a man's soft, flat cap with or without a peak', which fits the context perfectly, as the novel is set in Edinburgh. The search furthermore offers a translation of the search word into the language of the reader's choice (not shown in Figure 3); it is very strange that, for a translation into Afrikaans, it offers the word 'hasies' (small bunnies), and for Dutch it offers 'broodjes' (sandwiches).

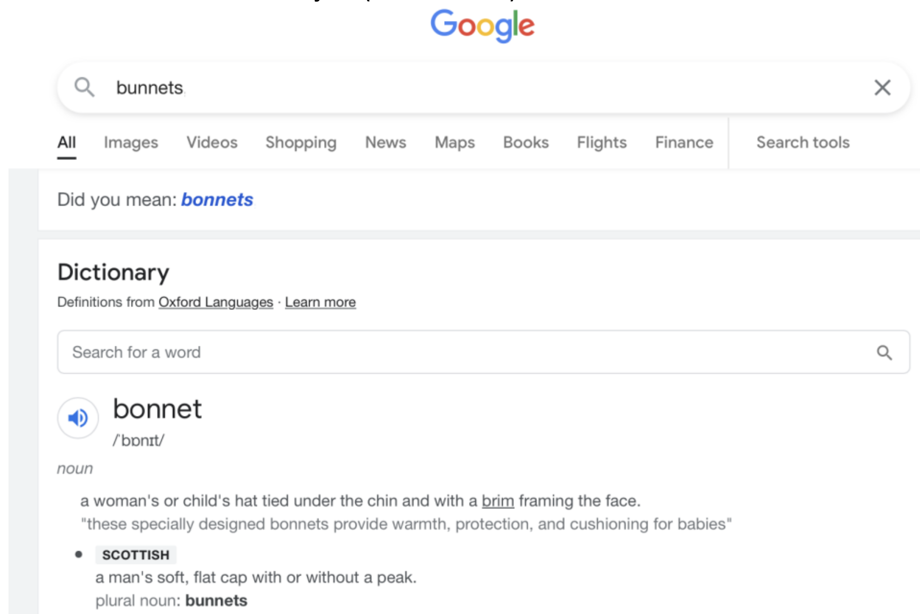

Figure 3: 'Bunnets' in a Google search, with the results from Oxford Languages

It is evident that the reader has to evaluate the results very carefully – the different English options, as well as the two translation versions, to ensure that the correct meaning and/or translation equivalents are selected. This again emphasises that the reader's information behaviour has to take into account their dictionary literacy skills and their information literacy skills, specifically their skill to critically evaluate the search results.

5.3 *Example 3:* '*Lightskirts, coney-catchers, pick-pockets and masterless men*'

The third example comes from a novel set in medieval Britain, in which the text 'lightskirts, coney-catchers, pick-pockets and masterless men' occurs. The term 'pick-pockets' is probably well-known, and would indicate that the text refers to a number of insalubrious individuals. The reader can accept that this is the case with the other three words as well, and may not want to distinguish between the four categories mentioned in the phrase. By clicking on each of the words in the Kindle app, the reader will find that only 'pick-pockets' occurs in the linked dictionary.

'Lightskirts' is easily found by doing a Google search from the dictionary pop-up window – the meaning 'A woman of lax behavior; a prostitute' (with the label 'dated') from Wiktionary is provided in the first search result, and this is corroborated by a number of dictionary entries from further dictionaries.

'Masterless men' seems to be self-evident – 'men without masters'; the question, however, is whether this refers to a specific group/class of men, or generally men who don't have masters. The linked dictionary does not list 'masterless', but links to 'master', and defines it i.a. as 'chiefly historical: a man who has people working for him', and lists 'masterless' only as a derivative. A Google search in the first few results refers to a band with the name 'Masterless Men', which is not useful. In this case, a tenacious reader will have to consult a specialist historic dictionary of English, such as the Oxford English Dictionary (OED), which, unfortunately, is behind a firewall and needs a subscription. 'Masterless men' provides no result, but there is a separate entry for 'masterless', which is defined as 'Of a person: having no reputable means of living; vagrant, vagabond, unemployed. Now historical. Notable as a term used in statutes of the 16th and 17th centuries.' It also provides quotations from a number of sources from the 16th and 17th centuries, including those provided in Figure 4.

1569 J. Stow *Survey of London* (1720) II. v. xxxi. 431/2 Thear to watche the coming of all Vagabonnds, Beggars, Children, and Masterles Men and Women.

1582 in *Recusant Hist.* (1962) 253 A vayne man..whithout any livelyhood to maynteyne himselfe withall A masterles man.

1626 in *10th Rep. Royal Comm. Hist. MSS* (1885) App. v. 474 All idle and maisterlesse personnes and such others as shall not finde maisters or men of quallitie to undertake for them.

1651 T. Hobbes *Leviathan* ii. xviii. 94 That dissolute condition of masterlesse men.

Figure 4: Sample quotations from the OED confirming the meaning of 'masterless men'

'Coney-catchers' is rather more complex. The compound 'coney-catcher' does not occur in the linked Kindle dictionary. 'Coney', however, does occur, with the meanings as in Figure 5.

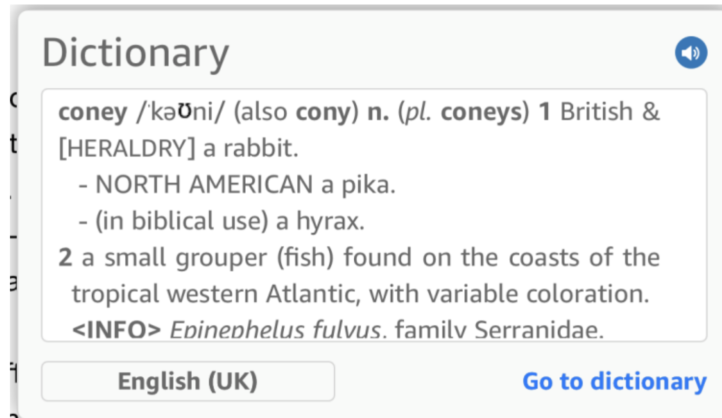

Figure 5: The pop-up window for 'Coney' in the linked Kindle dictionary

As the reader is aware that the novel is set in medieval Britain, the North American and Western Atlantic meanings are evidently incorrect, and the reader will opt for the meaning 'rabbit'. However, how does a 'rabbit-catcher' fit the context of insalubrious individuals, especially since the word is also used literally (see the OED entry)? A Google search reveals that 'coney-catching' is 'Elizabethan slang for theft through trickery', as is explained in Wikipedia (but which is not available through the Wikipedia pop-up window when clicking on the word). This can be confirmed by looking at the example quotations in the OED, some of which are provided in Figure 6.

coney-catcher, *n.*

Text si

View as: Outline | Full entry

Quotations: Show all | Hide all Keywords

Pronunciation: Brit. /ˈkəʊnɪˌkatʃə/, U.S. /ˈkoʊniˌkɛtʃər/

Forms: see CONEY *n.*[1] and CATCHER *n.*

Frequency (in current use):

Origin: Formed within English, by compounding. **Etymons:** CONEY *n.*[1], CATCHER *n.*

Etymology: < CONEY *n.*[1] + CATCHER *n.* Compare CONEY-CATCHING *n.*, and slightly later CONEY-CATCH *v.*... (Show More)

1. A swindler, a cheat, a trickster; a perpetrator of confidence tricks; a deceiver. Also *figurative*. Now *archaic* or *historical*.

Thesaurus »
Categories »

Popularized by Robert Greene (see quots. 1591[1], 1591[2]) and remaining common for 60 or more years.

1591 R. GREENE (*title*) A Notable Discovery of Coosnage. Now daily practised by sundry lewd persons, called Connie-catchers, and Crosse-biters.

1591 R. GREENE *Notable Discouery of Coosenage* f. 1v The Conny-catchers apparelled like honest ciuel Gentlemen..attend onely to spie out a pray.

1600 T. NASHE *Summers Last Will* sig. E3 A Carle: that is as much to say, as a conny-catcher of good fellowship.

1607 T. WALKINGTON *Optick Glasse* 15 Whereof that old-english prophet of famous memory (whome one fondly tearm'd Albion's ballade maker, the Cunnicatcher of time)..G. Chaucer took notice.

1632 R. BURTON *Anat. Melancholy* (ed. 4) II. III. VIII. 366 No sharkers, no Cunnicatchers, no prolers.

1657 S. PURCHAS *Theatre Flying-insects* 329 In this order are Cunnycatchers, who like the Devill are..still goeing up and downe seeking whom they may devoure.

Figure 6: An extract from the entry 'coney-catcher' in the OED

In this example, the reader can easily decide not to pursue a search for exact meanings, and simply guess meanings based on the broader context of the sentence or paragraph. However, a curious reader, with access to different information sources, as well as the skills to evaluate the results of their searches, will be rewarded with a richness of information that passes by someone that simply reads the text for the story.

Similar examples are discussed in Bothma and Gouws (2020), as well as in Bothma and Gouws (2022), where examples of browser-based linking of general texts on the web are also discussed.

6 Discussion

The processes illustrated in the preceding examples can be summarised as follows:

- A reader comes across a word in a text they are reading, the meaning of which they don't know, or want to check. I.e., an information need exists.
- Two options are available to the reader: Ignore the information need, in which case the information need is not satisfied and the process ends. Alternatively, decide that the information need should be satisfied, and the reader clicks on the word to access the dictionary article, Wikipedia and translation windows (the latter two only when the reader is online).
- If the article in the dictionary window offers an acceptable meaning, the information need is satisfied, and the process ends.
- If the visible section of the dictionary article does not satisfy the information need, the reader can scroll down in the dictionary window, or click on the link 'Go to dictionary'.
- Once in the dictionary, all dictionary literacy skills are to be used, and the reader has to decide:
    - Is the lemma to which is linked in the dictionary correct?
    - Is the part-of-speech correct?
    - Is any one of the usually multiple options offered correct in context of the sentence, or the broader context of the paragraph or book?
- If the reader answers "no" to any of the preceding three questions, they have to continue exploring different parts-of-speech, or different lemmata.
- If no satisfactory answer can be found, it could imply that the required information is not available in the selected dictionary, and the reader has the option to explore further.
- Further exploration implies consulting additional information sources, e.g. other dictionaries, an encyclopaedia, do a Google search (or decide on another search engine), i.e., the reader should know about information sources, and which sources can be regarded as authoritative.
- Evaluate the results by scanning or reading one or more of the new sources.
- This could, in most cases, lead to an acceptable solution for the information need, albeit with quite some effort.
- Verify the results, if possible.

The processes as outlined above seem linear, and do not make provision for iterative searches and evaluations. At all stages of the process, the reader needs to evaluate the results. If the results are not satisfactory, the previous step or steps need to be repeated. Depending on the complexity of the information need, any step could require multiple iterations. At each step in the process, the reader has the option to abandon the search for information, or to carry on. This aligns with Foster's (2005) work on the non-linearity of information seeking as shown on work on information behaviour.

The amount of information the reader is exposed to, is under their control, i.e., they can at any stage decide that they have consulted a sufficient number of sources, and is therefore not automatically exposed to an overload of information. User autonomy and agency are very prominent in the use of e-dictionaries. They decide on when and how to look up the meanings of words and controlling the amount of detail explained in explanations. E-dictionary functionalities offer options and choices to expand the scope for searching for meanings and to satisfy curiosity, e.g., extending to Google searches.

The reader searches for the correct meaning in a specific context, be this for leisure, work or any other reason. This context will determine how important finding the correct answer is, e.g., the difference

between reading for leisure and reading in a work situation. When reading a novel, it is very easy to decide it is not that important to have an exact meaning, and the reader can infer an approximate meaning from the sentence. If, however, it is a document within a specific work situation or discipline (e.g., law, engineering, medicine, astronomy) it may be essential to have an unambiguous, clear meaning. The context of the reader therefore determines to what extent it is essential for the reader to continue the information seeking process until an unambiguous result has been found. The reader's contextual awareness of the information need related to looking up a term and the context in which terms are explained is thus very important.

The text that is being read also has its own context. The meaning of a word can be determined by its immediate context, e.g., the sentence or paragraph in which it occurs, but also by the broader context of the volume in which the word occurs, as in the fairly straightforward examples discussed earlier, such as a historical context or the locality in which the text is situated. This requires users of e-dictionaries to contextualise the information provided in the dictionary entry, translation or Wikipedia entry, in terms of the sentence in which a word occurs and in terms of the situation in which a word is explained vs their explicit contextualised information need. From a lexicography perspective the ability to assess the appropriateness of information (i.e., explanations and situational relevance) is core to making the right decisions and often linked to grammatical knowledge personal context and background (as explained in Section 4 – Context and contextualisation).

The reader remains in total control of the whole process. They can, at any stage, decide that the information need is not paramount and can be ignored without a too serious impact on understanding the text. Alternatively, they can decide to proceed until a verifiable solution is found. This choice is determined by the information behaviour of the reader in the given context (or situation), which can be different in different contexts. The success of any in-depth quest to find the correct, verifiable solution depends to a very large extent on the level of the reader's mastery of the various literacies addressed in this paper: dictionary literacy (supported by grammatical literacy) to understand how to select and use the appropriate dictionary, and important aspects of any information literacy model or framework, viz. the ability to search for information, to know the appropriate sources, and the ability to critically evaluate the information that has been retrieved. All of this is dependent on the information behaviour of the reader in the given situation, and influenced by the context of the reader, and their understanding of the context of the text, as well as the context of the immediate environment in which a specific word occurs. Autonomy, agency, curiosity and tenacity are important.

From a lexicography perspective the ability to assess the appropriateness of information (i.e., explanations and situational relevance) is core to making the right decisions and often linked to grammatical knowledge, personal context and background (as explained in Section 4 – Context and contextualisation). Two characteristics that stand out are curiosity and tenacity. Information behaviour models often emphasise context, but not as explicitly as shown in the examples presented here from a lexicography perspective where the user's context for a search as well as the context for the meaning of a word is of core importance. "Desirable" characteristics and agency are also not explicitly acknowledged in information behaviour models.

7 Conclusion

From the preceding, it is clear that there is an interconnection between dictionary and information literacy, and that, in satisfying an information need, these concepts depend on the information behaviour of the reader in the specific context of the reader, and the context of the text being read. This

does not imply a hierarchical relationship between all these factors, but simply that they are interrelated, and that they influence one another in satisfying an information need (or even when the reader decides to ignore the information need). A number of related literacies were mentioned in the introduction to this paper, viz. media literacy, computer literacy, digital literacy, data literacy,visual literacy and numeracy. Since the preceding processes depend on the reader being computer literate, to work in a complex digital environment, and possibly access data sources as well as visual sources, these literacies all also play an integral part in solving the information needs of the reader. Not all of them are equally important in solving every dictionary related information need, but all could come into play, to a greater or lesser extent. Each of these literacies can be studied in its own right, at theoretical and practical levels. The contention of this paper, however, is that none of the literacies is an island, and that all of them could, in theory and in practice, be influenced by the other literacies. There are obviously many further literacies, such as financial literacy, statistics literacy, etc., and, in the broad context of information behaviour and information seeking and searching, all of these literacies can play a role, not necessarily in each context or situation, and not necessarily all equally important in each context or situation. This paper therefore advocates for a holistic approach to research in information behaviour and information seeking and searching, taking all aspects into account, where applicable, in research into theory and practice and to explore how lexicography can be used to enrich information behaviour research.

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