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Reconceptualizing Lexicography: The Broad Understanding

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Abstract

Lexicography has changed radically over the past 20 years and numerous scholars have discussed, in a vast number of theoretical contributions, whether lexicography is a science of its own and how it should be defined. But has the whole idea of lexicography, the way we see it in the first place, also changed? Is lexicography all about dictionaries one way or another? Can it be understood differently? In this light, the purpose of our paper is to propose a broad understanding spurred by the closing remark in Adamska-Salaciak's article on lexicography and theory as follows 'theoretical lexicography in its present form is unlikely to offer any such theoretical perspective', cf. (Adamska-Salaciak 2018:14). We do not wish to continue the somewhat tautological discussion of whether lexicography is a science or not, and bring in yet another definition. Instead, we intend to take Adamska-Salaciak up on her call for further theory development and introduce a reconceptualization of lexicography founded on a social-constructivist position paving the way to a broad understanding. In our discussion, we have drawn on established, seminal lexicographic theory, but reconceptualization requires a break with current views. Consequently, we have also drawn on theories discussed in Simonsen (2012), Christensen (2017), Fadel et al. (2015), Leroyer and Simonsen (2018a, 2018b), Liew (2013), Osterwalder and Pigneur (2010), Osterwalder et al. (2014), Weill and Woerner (2018), etc. Elaborating on the model of Verlinde et al. (2010) and Simonsen (2012), we explain how what we call 'lexicographic meaning-construction processes' are at the heart of lexicography. In this light, we present a seven-faced model showing how current and novel elements of lexicographic theory interplay and can be reinterpreted.

Keywords: social-constructivist position; reconceptualization; lexicographic meaning-construction processes; seven-faced model

1 Grounding the field: towards a broad understanding

The questions of whether or not lexicography is a science and what constitutes lexicography have been extensively discussed in a vast number of theoretical contributions over the years, such as for example Scerba (1940), Zgusta (1971), Wiegand (1984), Hausmann (1985), Tarp (2008), Bogaards (2010), Verlinde et al. (2010), Tono (2010), Bergenholtz and Gouws (2012), Rundell (2012), Piotrowski (2013), Bergenholtz and Agerbo (2017), Tarp (2018, 2019), Adamska-Salaciak (2018) and Margalitadze (2018), to name but a few.

Being a polysemous term, i.e. a complex, conceptual unit of meaning and understanding (Temmerman 2000) in an ever-changing environment, the term lexicography can be understood, not only as a product of our mind, i.e. a conceptual blend, but also as a series of continuing conceptualization processes framed by competing views on science (c.f. the above mentioned contributions). Yet, terms tend to be established at the terminal stage of processes, and lexicography is then defined into competing terms. This entails competing definitions drawing up distinctive conceptual limits and borders (*definere*), and attempting to keep things apart and make sense. As a result, definitions bring processes to an end, so meaning-construction comes into terms with concepts so to speak. Meaning freezes. In a field of expert knowledge as lexicography, in which definitions play a predominant role, defining not surprisingly seems to be one of the main issues so far in the realm of theory making addressing the seminal questions: What is lexicography? How should it be understood?

Therefore, attempting to redefine lexicography yet another time is not our purpose here. Rather, we intend to move borders and contribute to further theory development through a reconceptualization of the understanding of lexicography. In our attempt to do that, we base our work on a realization that we need a respectful, but necessary, detachment from past and present considerations. At the same time, we base it on a social-constructivist position to the ontology and epistemology of lexicography. A short voyage through the past and present stages of lexicographic (r)evolution will illustrate our position. The fact that lexicography has been subject to a number of revolutions over the centuries since the use of ancient clay tablets and roll and codex seems to be the rule rather than the exception. Static dictionaries of the print era have extensively given way to Internet dictionaries and lexicographic cyberspace. Trap-Jensen (2018) speaks of three revolutions: the descriptive, the corpus, and the digital revolution. The first two relate to dictionary making and are seen from the position of the lexicographer. The third goes further, as it includes not only new opportunities of dictionary making for human users, but also NLP and AI applications in which lexicography is turned into a language data provider of so-called machine users. We do not consider the first two revolutions as full-fledged revolutions proper. Both of them are the result of changes of an approach in language description, with the emergence of the big empirically based national dictionaries, moving from a prescriptive to a descriptive perspective, on the one hand, and with the use of corpus methodologies to improve language description, on the other. One should remember, however, that the prescriptive approach is still valid, as it is the cornerstone of terminographic description and standardization bodies. As far as the corpus revolution is concerned, we agree with Trap-Jensen. It has improved the quality of language description, but has not led to radical changes and has remained unnoticed by non-lexicographers. The digital revolution (which incidentally is closely connected to the corpus revolution) is a true,

ongoing revolution, leading to metamorphoses not only in dictionary making processes and dictionary forms, but also in dictionary use and in the general status of lexicography. Fuertes Olivera (2016) speaks of it as a “Cambrian Explosion”.

This gets us to the point where lexicography in existing theory is conceptualized as a discipline on a continuum between linguistics and IT – the mirroring of language through systematic language descriptions in dictionaries – including descriptions designed to become input in NLP and AI applications. Admittedly, the functional theory of lexicography (Tarp 2008, 2019) pushes lexicography further as an idealist, user-oriented science of its own, although with a lot in common with information science. Still, its tenets depart from objective views on dictionaries as objects of use responding to needs (objectivism), and of critical, empirical views on their use (phenomenalism), i.e. a post-positivist position.

This is what we choose to call the narrow, focalized understanding of lexicography. It is naturally prompted by lexicographers and their organisations doing dictionary work in theory and practice. They pursue comprehensive, objective language descriptions in order to mirror language in dictionaries, automated or not, that are designed to be used, whereby dictionaries are turned into language tools. However, the tool-driven conceptualization does not discern that lexicography is far from being limited to the making and use of lexicographic tools. Lexicography also includes lexicographic and metalexicographic processes whenever we take part in discussions and activities on and about language in meaning-construction departing from linguistic signs (lexical items), whether isolated or in combinations, or other semiotic signs.

This constructivist principle is *de facto* integrated today in online dictionary platforms, but not recognized as such. It is quite common for platforms today to include word-based services such as word games, critical debates and discussions about words, their definitions and usage, their history, chats, numerous questions and answers concerning words, word-centered events (word of the day, word of the year), suggestions for inclusion or creation of new words and new meanings. The list is far from being exhaustive. Common to all these is the critical study, construction, interpretation and sharing of meaning mainly triggered by lexical items, a social behaviour involving a vast number of actors, not simply users. The reason is that meaning really matters to us, and that interrogating and negotiating meaning makes sense. It is not only, as in the communicative model of (Jakobson 1960), a mere reflexive function of language in which the code becomes the object of the message. It concerns the making of the code itself, and our reflexive relationship to the code.

From now on we will speak of ‘Lexicographic Meaning-Construction Processes’, or in short LMCPs. LMCPs are reflexive processes of meaning construction, interpretation, structuration and representation. They are extensively triggered by – and applied to – units of meaning and understanding from our lexicon of semiotic signs, and fostered by the idea of getting to mutual understanding.

One might object that such processes are exactly revolving around the making, use and management of dictionary platforms and that lexicography therefore must be determined by dictionaries. Yet, meaning-construction processes are constantly taking place in a huge variety of social contexts other than dictionary making or use. They occur in politics, companies and organisations (henceforth C&Os), workplaces, language-planning bodies, institutions, educational contexts, at home, etc., whenever we take actively part in lexicographic processes as we discuss, create and record the meaning of lexical items, names, designations and concepts which are at the core of our private and professional life. This is not a matter of language mirroring but of language making, i.e. meaning-construction as part of the general processes of semiotic sense-making in our social life, much in line with the processes described by Weick (2009). Consequently, lexicographic processes are deeply embedded in the semiotic production and management of signs in a social and organisational environment. A great deal of lexicographic processes is certainly determined by the making and use of dictionaries for humans or data sets for machines, whereby processes come to an end and freeze, but most of these are not, and keep moving. The purpose of lexicography is not only to make lexicographic tools. It is also to support, through meaning-construction processes, cognitive sense-making mechanisms, individually as well as in organisations and social groups. At a higher level, the purpose is to frame semiotic meta-perception and construction of what we sense and call reality through language.

Many perspectives have changed, just as new ones appear. One perspective is the epistemology of lexicography. As explained above, lexicography goes far beyond tools of language description. It also includes the ongoing processes of meaning-construction by lexicographers AND by all of us as both users and actors, as we all engage actively in meaning-construction processes. Thus, we suggest a new word: ‘user-actors’. As notable as it is, dictionary making and use is only one of the user-actor roles we engage in. The overall lexicographic landscape is much broader.

Another perspective concerns the multimodal nature of the objects of lexicography. These have changed immensely. Dictionaries used to be stand-alone products, but are now autonomous and integrated in users’ tools and devices such as mobile phones and office software. Dictionaries or lexicographic products are ubiquitous and take on new hidden forms for us. They have changed from being full, self-contained objects to becoming partial, autonomous objects. More and more publishing houses sell lexicographic components to software producers and game producers etc. Lexicography has been fragmented and diversified, and new meaning-construction processes are at work because of these metamorphoses.

A third important perspective is the activity of lexicography. Dictionaries used to be a one-user experience. Now, lexicographic meaning-construction processes have turned into shared, collaborative activities, also on social media. They play a crucial role in language planning in many countries and regions of the world, and are guided by the co-construction and preservation of regional or national identity and culture. They are also at the heart of language policies and organizational communication in C&Os, and support corporate language management and language engineering systems. Finally, the users of lexicography deserve another role. Since Wiegand (1988: 778), lexicography was phenomenologically conceptualized as an action involving the meeting of user-determined use-objects having a “Genuiner Zweck” with “bekannte Unbekannte” users. Following the toolification phenomenology, lexicography has been developed into a system of individually, user-needs adapted lexicographic functions (Tarp 2008) and user profiles. Yet, dictionaries and lexicographic processes are also collectively determined. They support for instance the missions of C&Os and involve a great number of us as user-actors, not simply users. We will get back to this in the following sections.

The main thesis upon which we base our work is not simply that the subject matter, object, activity, actors, and orientation

of lexicography have changed considerably and that we should re-think them, but that changes have disclosed a theoretical view on lexicography that hitherto has remained under-represented. Therefore, time is ripe for a broader understanding.

2 Epistemological objectives and methodology

The epistemological objectives of this paper are to discuss and challenge current conceptual constructions of the term lexicography and to reconceptualize it from a social-constructivist position. In this light, the theory is applied to explain how present and new elements of lexicographic theory making can be understood in a broad sense. The methodology we used is founded on a critical literature analysis as described for example by Saunders et al. (2019). Prior to the analysis, we formulated a number of views on science and epistemological themes in the field that we looked for in the literature using the thematic analysis grid approach (Saunders et al. 2019:122-124). Firstly, we will briefly introduce relevant theoretical contributions and current conceptualizations of the term lexicography. Secondly, we will propose an expanded conceptual interpretation of the meaning of the term lexicography based on the key concept of LMCPs. We will then apply it in a seven-faced model showing the interplay between LMCPs and each of the faces.

3 Dictionary-centered structural and functional conceptualizations

Prevailing theoretical models of lexicography are based on structural (Wiegand 1988) or functional conceptualizations (Tarp 2008). They make the dictionary as the paragon research object of lexicography and place the relationship between dictionary, individual users and usage at the heart of lexicographic studies. Structures and functions frame the understanding of the key concepts of access, data, data selection, adaptation and presentation, and for the presentation of data to fully match the lexicographic information needs of intended users depending on their personal profile and situation in the world. It is worth noting, however, that lexicographers, editors and C&Os are largely absent from theory. So is every one actively taking part in lexicographic debates, discussions, and activities. In addition to that, lexicography normally refers to all of us as users, not as actors. Not much has been said about who we truly are or which role we actively play. With the exception of, to some extent, user studies and studies of the impact of dictionaries on society throughout history, the numerous social aspects of lexicography seem rather underestimated. Still, socialisation is highly visible and can be observed in the proliferation of lexicographically driven and inspired actions in crowd and collaborative lexicography such as for example *Wordnik* or *Thefreedictionary*, as well as debates among us all on the genesis, use and acceptability of new lexical items and meanings.

The recording of new words and meanings may frequently turn into ethical issues and challenges towards norms and policies in society. This shows that lexicography is actively shaping society through meaning construction and interpretation of linguistic signs and non-linguistic signs as units of meaning – images, sounds, icons, etc. C&Os make extensive use of lexicographic processes such as designating, naming, defining, explaining, exemplifying, recording their own vocabulary. These processes are aimed at the creation and management of all specialized words, expressions and other non-verbal signs that make up their “company-speak” (de Vecchi 2013). Company-speak includes brands and product names, and reflects their own way of building up and communicating their own knowledge and express their own culture and identity in the workplace and on the market. The same holds true for organizational communication.

The social context of lexicography, particularly its business dimension, whatever being profit-driven or not, tends also to be underestimated. Simonsen (2002a, 2002b), Leroyer (2007) and Leroyer (2018) are among the few to acknowledge this dimension and speak of “corporate lexicography”. In business, lexicography is more than just gratification, it also serves value-creating or value-adding agendas.

4 Understanding lexicography from a social-constructivist position: seven-faced model

So how should lexicography be understood? Lexicography might be referred to as a convergence discipline in line with Verlinde et al. (2010: 3), who describe it “as an information science at the crossroads of three basic perspectives, user, data and access” or as “a science based on six dimensions” (Simonsen 2012). We will refrain from conceptualizing lexicography in an objective manner, as the discipline aiming at the making of lexicographic objects as dictionaries, i.e. descriptions of language, and as a corollary, at the study of their usage and impact in and on society. We use dictionaries to find the correct, appropriate words (and other signs) to express our thoughts and emotions, to represent or acquire knowledge, to communicate (read, write, translate) and to take appropriate actions. However, we do much more than that. We want to find the right words, not simply the correct or appropriate words, but the words that precisely express the meaning we try to convey, the knowledge we keep working on. Language is socially constructed and so is lexicography. Lexicographic work is constantly being performed, words are transformed into right wordings that sound right so real mutual understanding, although utopic, can be achieved. Meaning-construction is the cognitive face of what Wittgenstein describes in his *Tractatus Logico Philosophicus* when he claimed “Dass die Welt meine Welt ist, das zeigt sich darin, dass die Grenzen der Sprache (der Sprache, die allein ich verstehe) die Grenzen meiner Welt bedeuten” (Wittgenstein 1922:145).

Therefore, we will reconceptualize lexicography not in objective and phenomenological terms, i.e. as object-determined activities or actions, but in social-constructivist terms. In line with Fauconnier (1994), we see lexicography as socially determined mental spaces of LMCPs triggered by the interpretation by user-actors of units of meaning and understanding in language (in the Saussurean sense of the word = language as a semiotic faculty). We even go a little further and do not limit meaning construction to natural language. Language consists of linguistic signs and non-linguistic signs as well, such as images, sounds, gestures, icons, etc. Signs are actively created, used and reflected upon every day in our private or

professional life, at home or in the workplace.

LMCPs are cognitive processes. They may – or may not – lead to the construction and use of lexicographic objects in part or totality. Most of the time, they do not. LMCPs are at the center of our reconceptualization and govern the interplays of the seven-faced model below. The model offers answers to the following seven ‘how’ questions:

1. User-actors and LMCPs: How do LMCPs turn us into user-actors?
2. Information and LMCPs: How do LMCPs determine satisfaction of information needs?
3. Mission and LMCPs: How do LMCPs help C&Os realize their communicative mission?
4. System and LMCPs: How do LMCPs form meaningful interfacing in lexicographic systems?
5. Data and LMCPs: How do LMCPs stand for all lexicographic data generation, including polysemiotic data?
6. Access and LMCPs: How do LMCPs rely on the multimodality of human as well as automated access?
7. Business and LMCPs: How do LMCPs bring in true value adding and creation in business?

The model is illustrated in Figure 1 below:

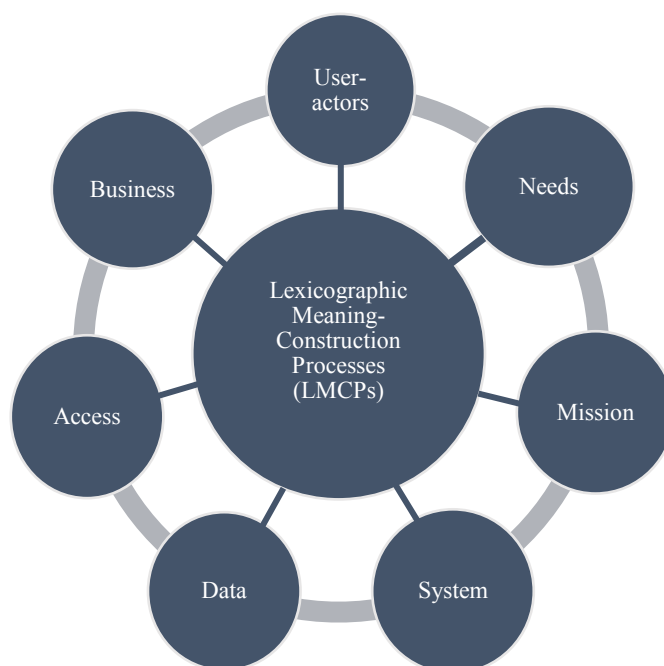


Figure 1: The seven-faced model of the broad understanding of lexicography

4.1 User-actors

A vast number of theoretical contributions on the concept of the user have dealt with the question of who the users are, for example Wiegand (1988) and Tarp (2008). From our position, the term ‘user’ is anchored in a narrow use and toolification perspective, an observation perspective objectively focussing “from the outside” on individual identity, profile and behaviour, whereas social roles and actions are underestimated. Rather than users, we should truly identify ourselves as user-actors. We may have multiple identities and profiles, but are all equally active in LMCPs related to individual or collective situations. User-actors are also involved in C&Os in line with Simonsen (2002:46), as we participate in business-related LMCPs, for instance in connection with sales and branding activities and in efforts to support the mission and vision of the C&O (Simonsen 2002, 2005, 2007a, 2007b; Leroyer 2007, 2013, 2018). The C&O dimension will be discussed further in sections 4.3 and 4.7 below.

User-actors are humans. The idea of non-human machine users replacing us in lexicography in automated systems is questionable. We are not being replaced. Simply, specific LMCPs are involved in the construction of the meta-rules that govern the construction of the algorithms of AI-systems that make them ‘intelligent’, and of NLP applications. As a corollary, critical LMCPs govern our meaning interpretation of machine output.

Furthermore, user-actors are co-producers of lexicographic data and often interact not only with the owner of lexicographic products but also between peers in action and co-action, cf. Leroyer (2016) and Simonsen (2002b). In this sense, user-actors, either individually or collectively, are at the heart of LMCPs. As already explained, LMCPs participate in our study, construction, interpretation and sharing of meaning triggered by linguistic signs and other signs, inside AND outside dictionaries. In fact, our collaborative making and use of lexicographic objects (dictionary platforms, glossaries, termbases, encyclopaedias, etc.) is only one aspect of LMCPs.

4.2 Needs for information and satisfaction of needs

Function theory (Tarp 2008) is similar to “Uses and Gratifications Theory” (Katz et al. 1973), which is individualistic and focussing on gratification that can be derived from the use of information and media. So, what characterizes our information needs as lexicographic user-actors? Moreover, what are our ‘lexicographically relevant’ needs? Are they simply needs that (somehow tautologically) can be satisfied by means of a dictionary? In our hypermediated society, we should remember that understanding the constructive power of language is even more important than ever. We subscribe to the realization of language as one of the most important building blocks of our perceived and interpreted reality, as new needs for meaning outside the dictionary arise. Our needs are much more comprehensive and are embedded in our every-day life.

One example of how needs constantly arise, and how they are constructed, can be illustrated by the corona virus in the spring of 2020. Corona has boosted lexical creation. New competing words and expressions are created, forms and meaning become unstable, and to various degrees, we all take part in meaning construction processes. Discussions flourish on social media. What is the meaning of new corona words? Are they the right words to use? How should they be spelled? Defined? Preferred? Rejected? Translated into other languages? What kind of cognition is at work behind them, since words are never innocent? When the French speak of “gestes barrière” (barrier gestures) to stop the virus through “distanciation sociale” (social distancing), they live in a war metaphor. The term “gestes de protection” (protection gestures) might just as well have been used to signify a far less combative view on the crisis. And even more dramatic: what is a virus in the first place? And what do we know exactly about this one? What does it mean for us? In situations like that, LMCPs are at the heart of the search for meaning construction and satisfaction. The purpose is to establish mutual understanding in a moving world created and manipulated by changing words and meanings, and by changing knowledge constructions.

Because dictionaries refrain from including neologisms as they appear, waiting for meaning to stabilize and fossilize, we correspondingly take on LMCPs to satisfy our needs to find the right words (at least right in our minds). The idea of mirroring language is utopian, because the reflection is always novel and changing. This explains why we here choose to reconceptualize ‘lexicographically relevant information needs’ and ‘satisfaction of needs’ as the search for meaningfulness – finding the right words – through activation of situated, relevant LMCPs. Function theory alone cannot explain how information needs can be satisfied if not extended to processes outside dictionaries. Relevance certainly matters, as the theory claims (Bothma & Tarp 2012), but relevance and cognitive consonance alone cannot explain it all. Cognitive dissonance, not falling into terms with meaning, is an equally important factor in the dynamics of lexicographic meaning-construction. Under consultation, satisfaction is determined by the interplay of LMCPs and cognitive structuration.

4.3 Missions and organizational goal-achievement in C&Os

C&Os have communicative needs and goals, but how do they achieve these? Not only do we as individuals have communicative needs or cognitive needs (Tarp 2008), but also C&Os and work communities have communicative needs (Simonsen 2002a). For this reason, they develop communication strategies. LMCPs are deeply involved in organizational communication, in efforts to make sense and construct the right discourse. This is necessary to support their mission. In their resolution to continuously legitimate their business and differentiate their value proposition in an even more competitive business environment, C&Os include in their business and organizational communication an array of strategies based on formats and registers of knowledge communication and language mediation, which hitherto were exclusively used by lexicography (Leroyer 2018). By doing so, C&Os simultaneously pursue their sales objectives and support the branding of their image and reputation (Leroyer 2007, 2011). These strategies may include explicative, didactic and pedagogic formats and have a strong focus on dialogue and interaction with primary stakeholders, the consumers or end users as part of their mission. This shows how LMCPs are actively at work. New company words are created, old ones become obsolete. Words are discussed, interpreted, negotiated, and are included into C&Os’ company speak. Others become parts of mission statements and of the in-house vocabulary and lexical assets of the organization.

At another level, non-profit, national lexicographic institutions and organizations use similar strategies in their public affairs efforts to promote the branding and ongoing development of scholastic, national dictionaries and gain legitimacy and political support. This includes fund raising strategies. In this communicative context, lexicography undergoes radical changes and develops new formats in which LMCPs are even more salient. From being normative or descriptive, lexicography becomes reflexive, interactive and co-active. C&Os do not simply compile lexicographic resources such as specialized in-house glossaries, termbases, query systems etc., but actively use these to discuss the making itself of glossaries, their design, their functions, transforming them into collaborative branding instruments, c.f. Simonsen (2007) and Leroyer (2018). It is no longer sufficient to craft definitions of company keywords and terms; focus is on discussion of principles for the crafting and understanding of terms. Similarly, multimedia components are not simply added and made accessible online, they are explicitly used and marketed to achieve pedagogic, didactic or gamification goals (Leroyer & Simonsen 2018a, b). These are all expressions of situated, organizational LMCPs at work.

Questioning knowledge construction and communication when discussing the construction of the meaning of terms is turned into a dynamic, collaborative activity. Key user-actors – C&Os and their customers or clients – negotiate the meaning of terminologies that are central to their business and brand experience in line with the ongoing transformation of the environment. Above, we used the corona virus example, but C&Os often launch new technologies, brands and services motivated by for example climate change or sustainability agendas, which is yet another example of dynamically constructed communicative needs. LMCPs are at the heart of all term-related activities of designing, naming, defining, and discussing, when new professional knowledge is constructed and needs to be communicated, shared and understood. The same reflexive activity can be experienced in the mission of non-profit, national or European lexicographic institutions in the development of new lexicographic resources and networks. They include the preparation and delivery of data

resources for NLP businesses, involving all key user-actors, the general public, C&Os, as for example through the European Lexicographic Infrastructure (ELEX.IS 2020). National and European language and research policies are determinant for collective, institutional LMCPs, and for the framing and achievement of communicative goals and missions.

4.4 Systems and meaningful interfacing

What are the relations between us and the structuration of lexicographic systems, including dictionaries? How do LMCPs relate to systems? Interfacing determines how data can be meaningfully accessed or generated through individuals or organizational systems, and how specific LMCPs come into play. This is for example the case of the Oenolex dictionary platform (Leroyer 2018) which allows professional organizations of the wine business in French Burgundy to edit and access data according to their business agenda (production, marketing, sales, distribution, organizational communication, public relations). LMCPs steer the navigation of wine actors in the heterogeneous lexical landscape of wine (production, business, law, consumption). Wine actors use them to construct and express their identity and culture through wine speak. The platform is also used to differentiate their position towards competitors or legislators, whom they often do not agree with, for instance when new categories of terms are created and imposed to designate new properties of the wine (mineral, minerality). LMCPs are then used to resist neology.

Interfacing between us, dictionaries and man-machine systems has changed. Specifically situated LMCPs are involved in which concepts like ergonomics and intuition are subject to meaning constructions. What is to be understood as ergonomic or intuitive or not? Some systems are clearly designed for us, while others are designed to be accessed by other systems through APIs or web services. As interfacing is increasingly becoming multimodal, new specific LMCPs come into play. Systems include mobile or ubiquitous systems featuring constantly updated interfaces on our smartphone. Systems also become increasingly multimedial, as they are accessible on multiple media platforms (Leroyer & Simonsen 2020). The concept of proximity is of high interest here, because data are accessible everywhere, at any time. Besides proximity, the key word is integration, and specific LMCPs will format and determine whether integration is meaningful or not.

Interfacing also becomes highly personal. In patient-centered health information systems for instance, in connection with electronic patient health records, medical data meaning interpretation – opaque terms, complex figures, graphs, unknown symbols, and interpretation of findings – the so-called epicrisis – is at the heart of integrative interpretation systems. Lexicographic solutions are involved and highly personal LMCPs are at work: They have a dramatic impact on a patient's ability to interpret personal, medical information and turn it into meaningful patient-doctor-hospital communication.

4.5 The generative and polysemiotic nature of data

The next dimension of our reconceptualization addresses the nature of what is normally understood by lexicographic data. We think of them as constructs generated by LMCPs. We also think of them in terms of polysemioticity.

What characterizes lexicographic data? From our constructivist position, we refuse to see lexicographic work as the exclusive selecting, recording, explaining and structuring of lexical data, and the securing of access to these so we can turn them into useful information. We do not believe that data are already present in the world, given to us, and waiting for us to be selected and recorded. Data are generated by lexicographers and actors and acquire their status of data as the outcome of specific LMCPs governing lexicographic work, including the compiling of corpora, which are themselves the outcome of LMCPs. Data are constructed by us as user-actors through shared LMCPs to generate meaning and secure mutual understanding. Therefore, we prefer to speak of data generativeness. Outside dictionary making, lexicographic data are constantly generated as new meaning data and metadata related to word creation and critical reflexion on usage of new words appear. This is why neonymic processing, as in the case of the Corona virus example above, is so highly relevant for us. The word 'virus' is a key to conceptual knowledge. What is a virus? Is it alive? How are we at risk? What can we do to protect ourselves? In times of crises and dramatic changes in society, language is challenged, and new LMCPs rapidly spread to bring meaning back on track. This entails massive data generation and massive LMCP activity.

In addition to that, there is also an increasing need for high-quality lexicographic data in both conventional lexicographic systems and in new ones such as for example writing assistants or augmented writing tools (Simonsen 2020a, 2020b). Without lexicographically curated data, these systems are not good enough because they lack the world knowledge and relational knowledge of humans. Here also, we engage in LMCPs to keep a critical distance to the output of machines, because we are intuitively aware of how world knowledge is constructed through word knowledge.

Lexicographic data go far beyond linguistic signs. There are other meaning modalities. Lexicographic systems today provide multimedial data (Leroyer & Simonsen 2020) in which lexical data are supplemented or replaced by multimedia data types. In LMCPs, other signs than linguistic signs are processed. These include simple and complex semiotic units of meaning and understanding, including icons, gestures, pictures, sounds, animated pictures, graphs etc. As already explained, C&Os provide many interactive, polysemiotic data types already through their communication (*Vins de bourgogne*) or (*Atomhus*) that are supported by LMCPs. In this light, it is surprising that lexicography, which is extensively language-determined, seems to have failed to remember that language is a faculty, not simply a system. As lexicographic user-actors we demand and process a huge variety of meaningful, non-linguistic signs. We do so by way of easy-to-use technology (Weill & Woerner 2018) because we want to understand and navigate in today's highly polysemiotic world. LMCPs rely on data generativeness and polysemioticity to generate a vast array of meaning constructions in many languages (language being used here in the Saussurean sense of the word, and not simply in the sense of natural language).

4.6 The multimodal nature of access

The sixth dimension of our reconceptualization is the multimodal nature of access. LMCPs are unfolded through two very different types of access modalities, search and explore. Access can similarly be divided into human-driven vs. machine-driven access (Simonsen 2020b; Colson 2019). Search is conventionally understood as a dictionary determined behavior, but need not be. We also perform a great number of dictionary independent searches all the time.

Search should not be understood as being the initial stage of LMCPs. Search never starts out of the blue, but is preceded by LMCPs leading to it and shaping it. Searches will then be accompanied and followed by other related LMCPs.

Explore is a serendipitous access modality. It is dynamically framed by specific LMCPs that establish sudden meaning on the move, as a surprise element, in the course of what is randomly discovered and suddenly makes sense.

With writing assistants and augmented writing technology, new modalities emerge. Lexicographic data are not only used by us, but are increasingly shared in automated writing technologies. As a result, there is a shift from human-based decision-making to human-based, machine-assisted decision-making (Simonsen 2020b; Colson 2019). Making decision on meaning, and deciding whether the right words are used or not, is subject to specific, highly conscious LMCPs that aim to qualify our understanding of the output of the machine and help us keep a critical distance, whenever the machine is suspected of failing to make itself understandable. New modalities of interpreting and understanding come into play.

Access modalities are changing dramatically, and the concept of access itself calls for reconceptualization. In our IT world where (seemingly) meaningful information can be provided instantly by search engines and AI algorithms, we may need to turn access upside down (Simonsen 2020a, 2020b). We may have to introduce a new division of labour and let machines do the labour-intensive and big data-intensive work, while we shall provide world knowledge that is missing. The point here is that it is no longer a matter of access in the traditional lexicographic sense. New conceptual LMCPs are increasingly being called upon to bring in world knowledge to the extent it is needed to validate sense.

4.7 Value-creation and -adding in lexicographic business

What is the business of lexicography? What type of value does it create or add in business? When we speak of 'lexicographic business', we choose to make a distinction between lexicography as a business proper, whether private or not (editors, dictionary platforms, language academies and departments, dictionary societies etc.) and lexicography in C&Os as part of a business. Because two different types of business-related LMCPs are involved.

In the former, business proper, total LMCPs are at work and determinant for all business processes. Lexicography then coincides (or should ideally coincide) with value creation inside and outside the business, and LMCPs at work are determinant for all processes in the organization. That goes for lexicographic business objectives (legitimacy, profitability) as well as internal and external organizational communication, including decision-making, power relations and ethics.

In the latter, lexicography as part of a business, partial LMCPs govern C&Os' ability (or not) to include lexicographic processes as value adding to the business and to internal and external organizational communication.

Business is the domain in which lexicography has changed the most, and probably the most visible part. Dictionaries are no longer the golden eggs they used to be, and business is in the process of constantly revising its models to stay in business (Simonsen 2017). The value chain has also been challenged (Simonsen 2017). In the Internet age, we want our information needs to be satisfied easily and swiftly, and we want it for free (Weill & Woerner 2018). Editorial production systems of the past are disrupted by IT providers, who have developed language platforms on which conventional lexicographic data are but a minor part of the entire value proposition (Ordbogen.com 2020). The concept of market is also subject to reconceptualization, as lexicography creates or adds value on radically different markets. New business models emerge and are being constructed, as lexicography, either directly or indirectly, is now implied in the delivery of lexicographic data sets for artificial intelligence applications, or experience-based services in C&Os (Simonsen 2007: 411-412).

In any case, the lexicographic business is challenged (Simonsen 2016). There seems to be a gap between what we as users demand (Customer Profile) and what the business can offer us (Service Profile), as discussed by Osterwalder & Pigneur (2010) and Osterwalder et al (2014). Business models are dynamic constructs and need to be constantly revisited in order to create or add the value we demand. The more closely and harmoniously integrated LMCPs are in the efforts to identify and achieve business objectives, whatever these are – to market dictionary platforms, support national language policies, inspire CALL applications, enrich branding experience, sales- and experience-based services, fuel AI applications – the better it is for the business and for the sense making processes of the business.

We live in the information and knowledge society, but drown in information (and misinformation) flooding and knowledge communication asymmetries. New knowledge is constructed and radical changes in society challenge language, making meaning fluctuating. These are problems that lexicography throughout centuries has addressed, providing strong solutions. Whether C&Os today are business actors creating full lexicographic value, or partial actors, using lexicography for value-adding, reconceptualizing the business of lexicography as organizational processes determined by business-determined LMCPs provides a better understanding of what is going on. Whether we do lexicography for a living, or simply take advantage of it for a better understanding of how meaning is constructed in our life, be it private or professional.

5 Concluding remarks: dictionaries are the tip of the iceberg

We have argued that the understanding of the term lexicography can benefit from a reconceptualization of its ontology and epistemology, and consequently an expansion of the object centered user-data-access model. While lexicography, guided by centripetal forces of reasoning, is extensively understood as the result of a toolification process – the making, use and life of lexicographic use-objects – we have argued, guided by centrifugal forces of reasoning, that lexicography should also

be seen as lexicographic meaning-construction processes, whether these are focalised on lexicographic use-objects or not. Although extremely visible, objectivation is but one mode of the ontology and epistemology of lexicography. Dictionaries are the tip of the iceberg. We have introduced a seven-faced model, which should be sufficiently broad to allow both scientific positions to be placed in a continuum, lexicography as product-determined at the one end and lexicography as process-determined at the other. The model reconceptualizes the following elements:

- An extension from lexicographic ‘users’ to lexicographic ‘user-actors’ dynamically authoring and shaping LMCPs.
- A distinction between individually driven functions and collectively driven missions, i.e. between information needs aiming at individual satisfaction and communicative needs aiming at mutual understanding and organizational goal achievement. In both cases, LMCPs can explain how satisfaction and goal achievement can be achieved.
- A recognition of the meaningfulness of interfacing as a condition for LMCPs to unfold.
- A recognition of the generativeness and polysemiotic nature of data through LMCPs.
- An understanding of LMCPs as keys to lexicographic business throughout a large number of organization processes, in which business-related LMCPs are building blocks of organizational communication.

It is our hope that the suggested reconceptualization of lexicography will inspire work framed by the broad understanding in the future, and will expand the fields of investigations. Particularly, research will be needed to describe and explain how LMCPs appear and evolve, and also determine how they impact the interactions of the different elements of the model. It should be possible to expand LMCP theory beyond the scope of a single, unifying theory, to a network of interdependent social-constructivist theories in all fields where lexicography is involved. This is only a modest beginning and the broad, all embracing understanding of lexicography presented here should be a key to new social research agendas in the field. Several disciplines will have to work together with lexicography e.g. social cognitive linguistics and social terminology, communication and media sciences, information sciences, business sciences, ethnographic science and social IT. The social-constructivist position has revealed a whole range of processes that hitherto were not identified as lexicographic as such. Perhaps a case of not seeing the forest for the trees? Where lexicographers seem to worry about the future of lexicography because dictionaries may well be becoming obsolete, we do not. Lexicography has always been very important to us right from the very beginning, but there has probably never been so much lexicography around us and between us as there is now. A reconceptualization of lexicography is the key to renewed optimism. Lexicography helps us make sense of our language faculty and of ourselves, and helps us better understand and make sense of the world we build, transform, share and ultimately care for.

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