

Specialized lexicon of water: a semantic study through lexicographic tools and methodology

Abibatou DIAGNE
Université Cheikh Anta Diop

Monika Christine ROHMER
Universität Hildesheim

Abstract. The lexical field of the notion of water in Wolof is very vast. It subsumes several other categories that reveal semantic specificities. Lexicographic tools (mainly dictionaries) allow us to see them and show how they are used in language practices. We are interested in the Wolof language, which has a large lexicon of words of water or relating to water.

The ground is laid by a comprehensive analysis of the lexical cotext of the Wolof lexeme *ndox* (water). The analytical framework of this study is Meaning Text Theory (MTT). MTT aims to describe the relationships between meaning (semantics) and form (syntax) through a series of levels of analysis. Combinatorics refers to the ability of language to group together phonemes, morphemes and lexical units under grammatical and semantic constraints. There is a strong link between lexical combinatorics, syntax and semantics, since it involves the grammatical structure and meaning of words.

Keywords: lexical combinatorics, Wolof, lexical functions, water, semantics.

INTRODUCTION

Our theoretical framework is the Meaning Text Theory (MTT). MTT aims to describe the relationships between meaning (semantics) and form (syntax) through a series of levels of analysis. These levels include morphology, syntax and semantics. MTT's lexicographic form is a Combinatory and Explanatory Dictionary. The dictionary-base perspective provides a broad view of lexical units taking into account grammatical constraints and the meaning they convey. We ask the following questions: Which lexical units are combined with *ndox* (water), through what mechanisms are these combinations made and what semantics do they carry? Combinatorics refers to the ability of language to group phonemes, morphemes and lexical units under grammatical and semantic constraints. There is a strong link between lexical combinatorics, syntax, and semantics, since it involves grammatical structure and word meaning.

The lexical field of the notion of water in Wolof is very large. It subsumes several other categories that reveal semantic specificities. A key feature of our study is the translation of lexemes and lexical categories into English. As we will demonstrate, it is not only necessary to identify corresponding lexemes in English but also to translate and convey a range of cultural details about the lexicalisation of the item.

1. THEORETICAL FRAMEWORK: MEANING TEXT THEORY (MTT) AND LEXICAL FUNCTIONS (LF)

1.1 Meaning Text Theory (MTT)

Meaning-Text Theory (MTT) is an approach to the lexicon mainly developed by Zholkovskij and Mel'čuk (1965). MTT places an emphasis on contextual analysis to capture the meaning of words and expressions. The meaning of a lexical unit depends strongly on its context of use. So, to fully understand the meaning of a lexical unit or a sentence, it is necessary to take into account the wider linguistic context in which it appears. MTT has a lexical component embodied in an Explanatory and Combinatorial Dictionary (Mel'čuk, 1984, 1988, 1992). It is intended to be a structured model in the tradition of formal grammar. It is also one of the materialisations, probably the best known, of Lucien Tesnière's approach to structural syntax. Tesnière (1959) developed an approach to linguistic analysis that focused on the formal structure of sentences and linguistic constructions. MTT takes into account all descriptive elements relating to the way in which words are arranged and combined to form more complex units.

MTT includes a Meaning-Text Model (MTM) which is strongly influenced by structural syntactic analysis. It deals with hierarchisation and configuration using schemas and representations, like tree diagrams, which illustrate the relationships between constituents. The MTM is presented as a formal tool for describing language correspondences between Meaning and Text; Mel'čuk (1997) and Milicevic (2007) illustrate this model.

1.2 Lexical Functions (LF)

Restricted lexical co-occurrence, also known as lexical collocation, refers to the frequent and preferential association of certain words or terms in a specific context. It is the regular appearance of certain words in relation to each other in particular expressions, sentences, or discourse. Collocations are combinations of words that are often used together and seem 'natural' to speakers of a given language. They are not always predictable from the individual meanings of the words that make them up. Collocations can take different forms, such as pairs of adjacent words, verbs followed by specific complements, fixed expressions, etc. They are therefore lexical units that have a strong affinity with each other.

Lexical functions encode restricted lexical co-occurrence in a systematic and regular way. The form of a lexical function is similar to a mathematical function $f(x) = y$, where x is the keyword and y is a value. The lexical functions, of which there are around sixty, provide an in-depth analysis of the words in a language by describing their semantic role in the sentence. For example, if we choose a keyword x as *pain*, and want to give it a value y of intensification represented by the LF MAGN, we could speak of *intense/unbearable/acute/severe pain*. From the point of view of restricted lexical co-occurrence, LFs of this type are situated on the

syntagmatic axis, since they show the way in which the keyword and the value combine in a linear sequence to form a more complex expression.

The other category of LF is paradigmatic, and mainly concerns lexical relations of synonymy (Syn), antonymy (Anti), etc. These functions also express the syntactic derivation of actants and circumstances (S₀, V₀, Adv₀, etc.). It is therefore a category of LFs that gathers values that act as possible choices (substitutions) for the keyword (Syn understand: comprehend; Adv easy: easily).

Having highlighted this about LFs, it should be noted that several lexical functions can be combined to form a more complex LF that expresses a given value in greater detail:

AntiMagn₁^{quant} (applause): rare (this LF means ‘antonym of a lot’)

IncepPredPlus (fever) = rise/ increase (this LF means ‘starting to become more’)

The exponents attached to the LFs are additional specifications on the nature of the LF. Alain Polguère (2000) points out that there is sometimes no strict separation between syntagmatic and paradigmatic LFs. The LF Magn can be expressed without a collocative, since the value itself contains the meaning of the keyword in addition to the meaning of the function (Magn (tire): exhaust). Both types of LF model ‘the contextually restricted expression of added meaning’ (Mel’čuk and Polguère, 2021: 16).

2. THE WOLOF LANGUAGE AND THE LEXEME *ndox*(WATER)

Linguistically, Wolof is classified within the Senegambian branch of the Niger-Congo language family (Greenberg, 1963). Over 1,500 languages are assigned to this family, which are spoken in great parts of Sub-Saharan Africa. The most important branches are the Bantu languages, including Kiswahili, Yoruba, and isiXhosa. Wolof belongs to the Atlantic languages, as does Pulaar, another important language of Senegal. The Senegambian branch is characterized by an initial consonant mutation (Storch, 1995).

In Wolof, the initial consonant may change for morphological reasons, differentiating a verb from a noun. As an example, we can give the verb *set* (to be clean) and the noun *cet* (cleanliness). In this line, the noun *ndox* (water) might be derived from the verb *dox* (to walk, to move). Hence, *ndox* (water) in Wolof might be characterized by its movement, its flow.

Further, the Senegambian languages display noun classes, as most Niger-Congo languages. Wolof has ten different noun classes, of which two are plural classes. The class is not marked on the noun itself but becomes visible when the noun is further determined by an article or a relative construction. For instance, the noun *cet* (cleanliness) belongs to the g-noun-class and the cleanliness would be translated

as *cet gi* or *cet ga*, depending on the proximity to the speaker. The lexeme *ndox* (water) is classed in the m-noun-class. The m-class regroups primarily liquids, next to *ndox mi* (the water), it includes words such as *meew mi* (the milk). The m-class further contains numerous plants and animals. Finally, the class further holds numerous hollow objects, including *pax* (hole), but also *mbànd* (large water tank) (Pozdniakov and Robert, 2015: 623-634).

This introduction already illustrates how different linguistic branches interconnect when encountering water or *ndox* in Senegal. Further, it poses first challenges about translations into English. How could one render the aspect of proximity in the article *mi* in *ndox mi* in English without overemphasising it?

3. LEXEMES IN THE SEMANTIC FIELD OF *NDOX*(WATER)

In immersion

Sóob	to put into a liquid
Sóor	to put into a liquid while cooking
Diig (al) (ci ndox):	to immerse
Jiib	to plunge sth./so. into water
Nëq / Naq	to plunge sth./so. into water and hold under water by force
Xooj	to plunge sth. and to let it soak
Nutti	to sink into water, to dive down
Nukki	to reappear from the water
Féey	to swim
Nuuru	to dive into deep water
Xuus	to wade through water

Excess of water

	bas-basi	
	baawaan	
	bàll	
Ndox muy	xelli	flowing in abundance
	xëpp	
	wàll	
	wàllangaan	

We note that Wolof has a rich lexicon of words meaning flowing in abundance. This finding might be easily explained by the fact that in places where rains are only seen in two or three months of a year, once the water flows it is of crucial importance. People can survive only if the rains fall in sufficient quantities. This also explains the positive connotation of these words. These are not lexemes pointing to the destructive powers of water but to the power of water to give life.

There are two nouns that usually appear in discourses and discussions on flooding in Wolof:

Mbënn mi/mbënd mi	inundation, flooding
Waame gi	deluge

These nouns point to an excess of water as do the English terms flooding, inundation, and deluge, they are connotated negatively.

Next to lexemes denoting the excess of water as in flowing in abundance or flooding, the following list includes words that point to further forms of excess of water:

Guus	to be damp
Màndi	to have drunk enough and even more than enough
Lóor	to be soaked
Rembet	to be full to the brim
Rogalaat	to drip, to overflow
Senn	to drip after water infiltration
Siit	to drip of an object
Xormbet	to be too liquid

These terms refer to the state of having absorbed enough or more than enough waters, including persons (as in *màndi*), or concerning objects (as in *xormbet* or *lóor*). For these examples, the lexical units implicitly include the notion of water. The intervention or passage of water is perceptible on an object. The activities necessarily involve water.

The following sentences illustrate this:

Senn	Kër gee ngi senn	The house is dripping. / There is a water leak in the house.
Siit (al)	Yere baa ngi siit	It is dripping slowly from the cloth.
Guus	Yere baa ngi guus	The clothes are damp.
Rembet	Bool ba ngi rembet	The bowl is full to the brim.

Lack of water

In stark contrast, there are only few lexemes denoting a lack of water, signifying drought or drying up:

maral	drought
qeer	to dry up

Resultative semantics

Fàcc	to yield under liquid pressure
Xormbet	to become too liquid and not thick enough
Tooy	to become wet

Teey	water becomes less turbid after all particles sink to the bottom
Sàmbaraax	agitated when talking about the sea
Tis	Result of small quantity of water that splashed

While these lexemes can partially be attributed to other categories, the important unifying point are the resultative semantics encoded. Here, one action leads to another, a cause to an effect.

Reasonable use of water

Yaxanal	Use water sparingly
Sàmm ndox	Making good use of water
Fonk	Use water carefully

While in everyday conversation these three words are employed interchangeably, the meaning differs slightly. *Yaxanal ndox* (to use water sparingly) is not to waste water. Here, water is considered a resource that has to be employed consciously. This would be similar to other resources such as electricity, fuel, or money. *Sàmm ndox* (making good use of water) puts focus on the protection of water and is also used for not polluting the water. Water is viewed not merely as a resource, but rather as godly gift, since *sàmm* also appears in religious contexts. Finally, *fonk ndox* (use water carefully) puts an emphasis on the relational aspect of water. *Fonk* is also used for friendships and human relations.

4. RESTRICTED LEXICAL CO-OCCURRENCE: LEXICAL FUNCTION (LF)

LFs are not lexical co-occurrences in the strict sense of the term or in the sense of an idiomatic expression. Rather, they describe ‘in a systematic way a vast set of more or less fixed locutions’ (Mel’čuk, 1984: 6). Mel’čuk, provides a semantic clarification of the notion of *function* which is used for practical reasons of distinction. Since we are in a multivocal relationship, *correspondence* would have been the most accurate term; however, it is already widely used in linguistics, but also by misuse of language. LF is used to describe the more or less fixed restricted lexical context of the term *ndox*. This is a necessary addition to enable readers a thorough understanding of some of the words listed above.

4.1 Typical attribute A₁, A₂ (noun complement in Wolof) for the first, second ... actor on *ndox*

A ₁ (ndoxu ‘water (for/of)’):	<i>naan</i> (to drink, drinkable) (<i>ndoxu ~</i>)
A ₂ (ndoxu ‘water (for/of)’):	<i>taw</i> (rain) (<i>ndoxu ~</i>)
A ₃ (ndoxu ‘water (for/of)’):	<i>géej</i> (sea) (<i>ndoxu ~</i>)

A₄ (ndoxu ‘water (for/of)’): *robine* (tap) (*ndoxu* ~)

A₅ (ndoxu ‘water (for/of)’): *teen* (well) (*ndoxu* ~)

4.2 Water quality: ‘as it should be: Ver ‘good’

Ver (ndox): *set* (clean, drinkable) (*mu*~)

AntiVer: *setul* (dirty, undrinkable) (*mu*~)

Bon (ndox): *sell* (pure) (*mu*~)

AntiBon (ndox): *sellul* (impure) (*mu*~)

4.3 Rainwater

IncepOper (*taw* ‘rain’): *sebbi* (to start raining)

ContOper (*taw* ‘rain’): *sēmb suuy* (to rain continuously)

FinOper (*taw* ‘rain’): *séwét* (to stop raining)

AntiVer (*taw* ‘rain’): *ëgg* (rain outside of the rainy season)

S_{Result} (*taw* ‘start raining’): *taw* (rain)

Symp (*taw* ‘rain’): *xiin* (clouds heralding rain)

Syn (*taw* ‘rain’): *wis* (light rain)

Excess (*taw* ‘rain’): *waame gi* (deluge, high levels of rainfall)

[result: *mbënd* (flooding caused by heavy rainfall)]

AntiMagn (*taw* ‘rain’): *wis-wisal* (to drizzle)

AntiMagn (*taw* ‘rain’): *ñapp-ñappal* (to rain finely)

AntiMagn (*taw* ‘rain’): *wis* (to drizzle lightly, light rain)

Magn (*taw* ‘rain’): *sóob* (to rain cats and dogs)

4.4 To fill with water (*root*)

Syn (root ‘to fill with water’): *duy* (‘to fill with water’)

A_{2Result} (root ‘to fill with water’): *fees* (‘to be full’)

Magn (root ‘to fill with water’): *rembet* (‘to be full to the rim’)

4.5 Metaphors encoding lexemes of the semantic field of *ndox*

Figur (*xol* ‘heart’): *tooy* ‘to be wet’ (*bu*~) to be submerged by emotions

Figur (*mbir* ‘something’): *tooy* ‘to be fresh/ brand new’ (~ *bu* ~) something that is brand-new

Figur (*xol* ‘heart’): *wow* ‘dry’ (*bu*~) be completely insensitive

Figur (*xol* ‘heart’): *laab* ‘drinkable’ (*bu*~) to have a pure heart

Figur (*wax* ‘speech, talk’): *senn* ‘to ooze’ (*ju*~) confidential discussion revealed

Figur (*wax* ‘speech, talk’): *xěpp* ‘to flow in abundance’ (~) to speak a lot

Figur (*nandal* ‘to water’): *nit* ‘human, person’ (~ *nit*) provide a person with knowledge

Figur (<i>taataan</i> ‘to collect water’):	<i>kàddu</i> ‘comments’(~) gather comments, collect ideas
Figur (<i>jukki</i> ‘to draw water from a well’):	<i>xibaar</i> ‘news, information’(~) to transmit information

CONCLUSION

Working with Meaning Text Theory (MTT) and lexical functions allowed us to systematically approach the vast field of semantics of water in Wolof. Through private conversations we learned that attempts to study the lexical field of water had been discontinued due to the vast number of terms and the complexity of the field. Our approach of a meaningful classification in line with MTT enabled us to systematically analyse our corpus and reveal semantic specificities, also for a non-Wolophone audience. When applied in this way, MTT proved a valuable tool many terms and expressions revealed in our study are mostly unknown and seldom encountered in everyday speech. While terms such as *ndox* (water), *géej* (sea), or *jàpp* (to do ablutions) are known to all Wolof speakers, *ñapp-ñappal* (rain thinly), *fiiru* (reject water by the nose) or *xormbet* (to be to liquid) are unfamiliar to many speakers. In similar ways, this is true for the English language. While most languages have a rich lexicon of water, many terms are not in use.

What is important in this line is the fostering of a written culture of Wolof (Diagne, 2020: 134). Currently, we witness efforts in the literary realm to preserve ancient writing such as the digitisation of Wolof poetry in Arabic script (Ngom, 2015). The author Boubacar Boris Diop gained much international attention with his decision to write his novels in Wolof (Diop and Tervonen, 2003). With his publication house, he further makes available contemporary literature in translations into Wolof. These efforts counter the loss of words criticised above. The next step is to go beyond the domain of literary and artistic expression. To discuss certain matters in Wolof makes necessary processes of translation including paraphrase. Scholarly endeavours in terminology are one aspect in which our study is relevant.

References

- Diagne, A., 2020, “Wolof Terminology: Lexical Morphology and Sociolinguistic Implications”, *IJL*, vol. 12 issue 5, pp. 121-141, DOI: 10.5296/ijl.v12i5.17744.
- Diop, B. B., Tervonen, T., 2003, “Le français n’est pas mon destin”, *Africultures* 2003/4, issue 57, pp. 109-112.
- Greenberg, J., 1963, *The Languages of Africa*, Bloomington, Indiana University Press.
- Mel’čuk, I., Polguère, A., 2021, “Les fonctions lexicales dernier cri”, in M. Sébastien (ed.), *La Théorie Sens-Texte. Concepts-clés et applications*, L’Harmattan, pp. 75-155.
- Mel’čuk, I., 1997, *Vers une linguistique Sens-Texte. Leçon inaugurale*, Collège de France.

- Mel'čuk, I., Clas, A., 1988, *Dictionnaire explicatif et combinatoire du français contemporain : recherches lexico-sémantiques*. 2, Les Presses de L'Université de Montréal.
- Mel'čuk, I., Clas, A., 1984, *Dictionnaire explicatif et combinatoire du français contemporain : recherches lexico-sémantiques*. 1. Les Presses de L'Université de Montréal.
- Mel'čuk, I., Clas, A., 1992, *Dictionnaire explicatif et combinatoire du français contemporain : recherches lexico-sémantiques*. 3. Les Presses de L'Université de Montréal.
- Ngom, F., 2015, "Murid Ajami sources of knowledge", in M. Kominko (ed.), *From Dust to Digital. Ten Years of the Endangered Archives Programme*, Open Book Publishers, pp. 331–376.
- Polguère, A., 2000, "Towards a theoretically-motivated general public dictionary of semantic derivations and collocations for French", *Proceedings of EURALEX*, pp. 517-527.
- Pozdniakov, K., Robert, S., 2015, "Les classes nominales en wolof : fonctionnalités et singularités d'un système restreint", in D. Creissels and K. Pozdniakov (eds.), *Les classes nominales dans les langues atlantiques*, Rüdiger Köppe Verlag, pp. 567–655.
- Storch, A., 1995, "Die Anlautpermutation in den westatlantischen Sprachen", *Frankfurter Afrikanistische Blätter*, Sondernummer 2.
- Zolkovskij, A. and Mel'čuk, I., 1965, "O vozmožnom metode i instrumentax semantičeskogo sinteza (On a possible method an instrument for semantic synthesis (of texts)", *Naučno-tekničeskaja informacija* (Scientific and Technological Information), volume 6, pp. 23–28.

Abibatou DIAGNE is a linguist interested in lexical issues from a descriptive and discursive point of view. She works on enriching the lexicon of languages spoken in Africa: terminology for development and documentation. She is interested in the lexicon as a pivotal element of language at all levels of language analysis, hence her work on language practices and the actual use of the lexicon by speakers.

Monika Christine ROHMER is a transdisciplinary scholar combining intercultural philosophy, applied linguistics, the study of verbal arts, and postcolonial theories. In her PhD, she compared conceptualisations and metaphors of water at the Senegalese Coast with a focus on French and Wolof. She is a postdoctoral researcher at Hildesheim University.