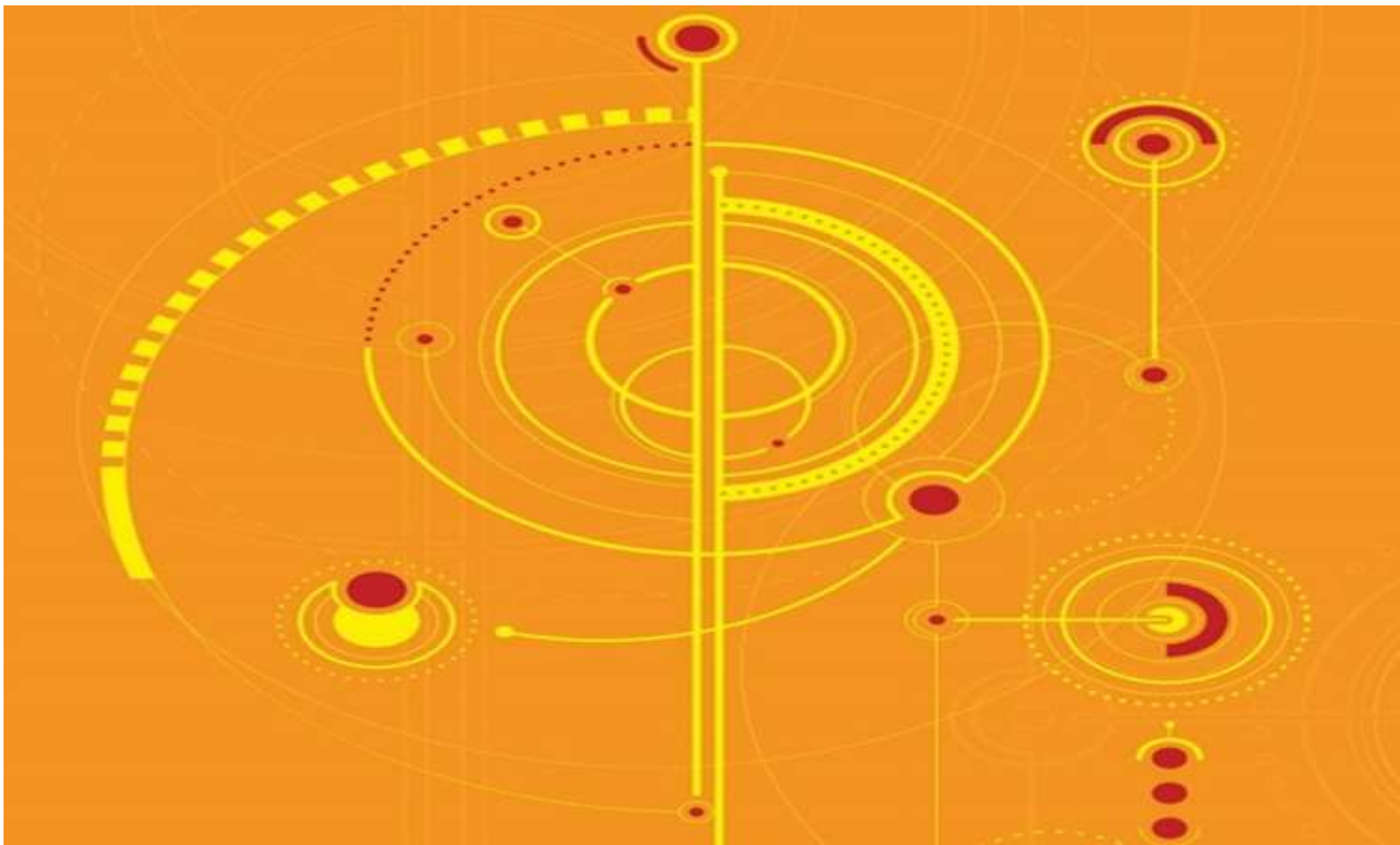


Second Workshop on Paradigmatic Word Formation Modelling

ParadigMo II

Program and Abstracts



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Booklet of abstracts

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Modelling word-formation paradigms: networks visually representing their multidimensionality, complexity and theoretical infiniteness

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Abstract

The growing importance of a paradigmatic approach to word formation has been evident at scientific meetings on morphology in recent years, such as the 12th Mediterranean Morphology Meeting 2019, ParadigMo 2017, two workshops at SLE 2015, and in volumes such as *Lingue e Linguaggio* XVII(2), 2018, and *Morphology* 29(2), 2019.

Our work focuses on modelling word-formation paradigms. We propose that networks (Newman 2010) provide the means to model and visually represent word-formation paradigms. Networks enable us to represent paradigms at both the large scale and the small scale, bringing visual and conceptual evidence to the multidimensional relationships that shape paradigms (Štekauer (2014) and to the dynamics of the mental lexicon (Libben 2015, Elman 2011).

The relationships between the items of a paradigm can be founded on different features (Pounder 2000, van Marle 1985, Štekauer 2014), such as word class, semantic rules or formal features (Pounder labelled these features *lexical paradigms*). Štekauer (2014: 359) refers to semantic structures (AGENT, INSTRUMENT, ACTION) and to the formal realisation of these categories (suffixation in *-ation*, *-ment*, etc.). The feature that is responsible for cohesion among items of the paradigm is called the *axis of the paradigm* by Rodrigues & Rodrigues (2018). Bonami & Strnadová (2019: 170) use the term *paradigmatic system* to refer to relationships between pairs based on content (which includes syntactic and semantic categories). The term *series* is reserved for the relationships between pairs based on the share of a derivational affix (Hathout 2009).

Bearing these aspects in mind, we consider that a network model serves as the basis to describe and visualise the multiple and complex relationships built within and by derivational paradigms.

Our study is based on the analysis of a corpus comprising 8414 Portuguese deverbal nouns and their relationships with derivative verbs (Rodrigues 2008). Of those 8414 deverbal nouns, 4917 are deverbal event and state nouns (ACTION, PROCESS, STATE, etc.), and 3497 are individual deverbal nouns (AGENT, INSTRUMENT, PLACE, etc.). The analysis of the relationships between deverbal nouns and verbs yields the following aspects, which may be conceived as organised into networks:

a) the constraints between the morphological structures of the verbs and the morphological structures of the nouns (which nominaliser suffixes (do not) correlate with which morphological structures of the verbs). E.g., there is no paradigmatic series constituted by deverbal nouns with the suffix *-ção* in a relationship with verbs constructed with the suffix *-ec-* (*esclarecer* *: **esclareceção*), whereas the series constituted by deverbal nouns with the suffix *-mento* in a relationship with those verbs is a dense one (*esclarecer* : *esclarecimento*);

b) the constraints between the syntactic-semantic structures of the verbs and the morphological structures of the nouns (which nominaliser suffixes (do not) correlate with

which syntactic-semantic structures of the verbs). E.g., there is no paradigmatic series comprising unergative verbs of sound emission in a relationship with event nouns with the suffix *-agem* (*gritar* *: **gritagem*), whereas there is a series correlating this type of verb with deverbal nouns with the suffix *-aria* (*gritar* : *gritaria*);

c) the constraints between the syntactic-semantic structures of the verbs, the morphological structures of the nouns and the semantic structures of the nouns (which syntactic-semantic structures of the verbs (do not) correlate with which morphological structures of the nouns and with which semantic structures of the nouns). E.g., there is no relationship between unergative verbs of sound emission and nouns with the suffix *-aria* and the meaning of PLACE (*gritar* ‘to roar’ * : *gritaria* *‘place’ vs. *gritar* ‘to roar’ : *gritaria* ‘uproar’); whereas there is a relationship between causative verbs with nouns with the suffix *-aria* and the meaning of PLACE (*barbear* ‘to shave’ : *barbearia* ‘barbershop’);

d) multi-suffixation, that is, the different paradigmatic series the same verb may belong to, when correlated with nouns bearing suffixes working in the same lexical paradigm (e.g., *refinar* ‘to refine’ /*refinamento* /*refinadura* /*refinagem*, in which the four nouns are deverbal event nouns).

Bearing in mind the complexity, the multidimensionality and the theoretically infinite character of word-formation paradigms, networks present advantages over other representations, since they can show:

(We use “vertex” as a correspondent of “word” and “network” as a correspondent of “paradigm”.)

- the different axes (Rodrigues & Rodrigues 2018) or features underlying different paradigms, whether they are organised around semantic features or formal features;

- series and families and the correlations that a base can establish within different series (verb : event noun (*refinar* : *refinamento* / *refinação* / *refinagem*)) and within different families (verb : event noun / verb : agent noun (*refinar* : *refinação* / *refinar* : *refinador*)), that is, the degree (number of edges attached to the vertex) of the vertices of the network(s);

- the hubs, that is, the vertices with a higher degree (e.g., the bases that have more correlations with more derived words);

- morphological competition among paradigmatic series, measuring the size and density of the networks;

- niches (Lindsay & Aronoff 2013) inside lexical paradigms, based on the semantic specialisations of paradigms;

- the potentiality of paradigms (expansion of the network), by measuring the degree of frequency, predictability and productivity of the series (cf. Hawkins & Blakeslee 2004, Plag & Baayen 2009, Bell & Schäfer 2013; 2016);

- the correlation between the morphological complexity of the paradigm (bearing in mind the geodesic distance between vertices) and its regularity and saturation (Körtvélyessy 2015);

- cross-paradigms (Rodrigues & Rodrigues 2018), that is, “paradigms that interface with one another, in a structured network, by means of a feature that is shared by the several paradigms involved” (Rodrigues & Rodrigues 2019), and their new developments (expansion of the network) (e.g., Rodrigues and Rodrigues (2019) analyse the case of nouns with the suffix *-ção* which has come to acquire a new meaning of ‘intensity/iteration’ in Brazilian Portuguese’).

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