

Literary Speculation and Shifting Ecosystems in the Digital Environmental Humanities

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1. Introduction

In the research project “To See the Tree and the Forest. Reading the Poetry of António Ramos Rosa from a Distance” (DOI: 10.54499/2022.08122.PTDC), we are invested in generating new insights for studying poetry from a perspective that embraces speculation at its core. In our presentation at the DH2024 Conference, we will first introduce the process of text analysis we have been developing during the project's timeframe. Then, we will show two of the main outputs for the first time: (1) a set of data visualizations, and (2) the preliminary versions of electronic literature works that we will exhibit in Porto later in October 2024. With this, we aim to discuss how data visualization and digital artistic interventions foster an environment conducive to critical reinterpretation, with “reinventions” anchored in the “responsibility” of ecocritical perspectives.

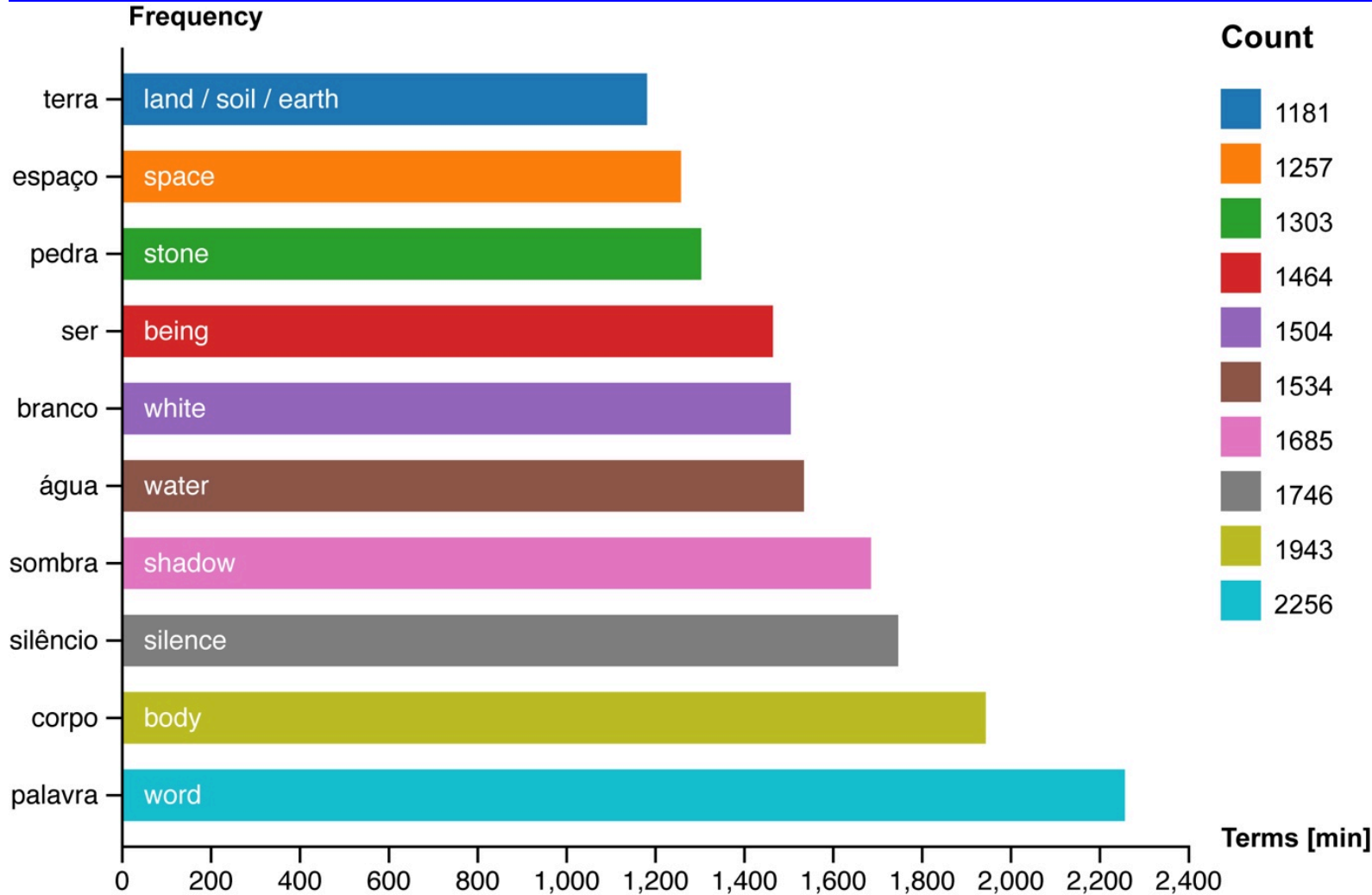
2. Shifting Ecosystems

Drawing primarily on techniques from the digital humanities and computational literary studies, our team has been applying text analysis to the complete works of the Portuguese poet António Ramos Rosa. This systematic processing offered us a bird's-eye view of the corpus and allowed us to then focus particularly on ecocritical aspects. Our goal with this is to shed new light on how animal, vegetable, and mineral actors contribute to a poetic construct that conceives the world from an ecological perspective. By connecting digital humanities with environmental humanities, our project has been actively contributing to the critical branch that has been previously referred to as digital environmental humanities (Posthumus and Sinclair 2014, 2016; Jørgensen 2014; Cohen and Lemenager 2016; Travis and Holm 2016; Gould 2017).

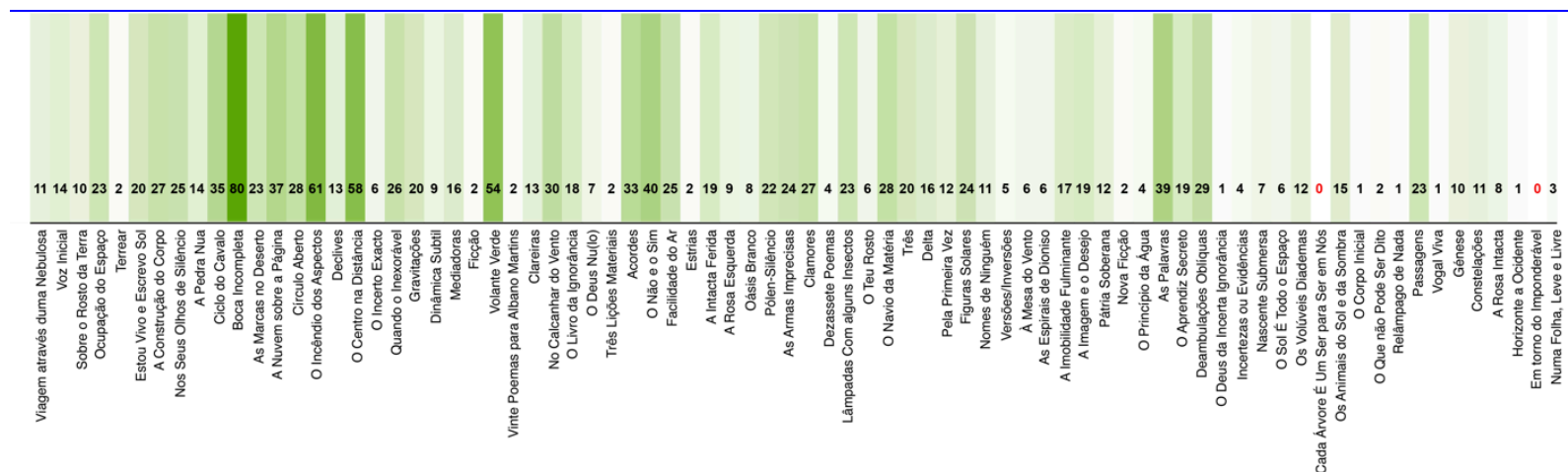
Beyond this challenging approach, data-driven studies of literature usually focus more on fiction than poetry. Additionally, most projects of this kind deal with literary history and are based on large text collections. Therefore it is not usual either to find computational methods applied to the interpretation of an individual work or a single author's complete works. Yet, exceptions to this non-written rule include, for instance, the crucial work of Martin Paul Even on David Mitchell's *Cloud Atlas* (Eve 2019), Enrique Mallen and Luis Meneses on Pablo Picasso's bilingual poetry (Mallen / Meneses 2019) and Justin Tonra on Thomas Moore's poetry (Tonra 2021). In our case, we are dealing with almost 80 poetry books by a single author consisting of a corpus of approximately 390.000 words before suppressing stop-words.

3. Text Analysis and Data Visualization

Regarding the methodology designed to carry out the project, we have been using R language and several targeted packages for text analysis (including tidytext, quanteda, tm, qdap, textstem and others) and RAWGraphs for data visualization. When preparing the data for computational analysis, one of the most challenging processes was that of lemmatization in Portuguese language, mainly due to the poetic bias of the lexicon present in the corpus, something we will comment on later in our presentation. We have been applying several statistical methods to analyze the corpus, in different levels of specificity in the queries, also approaching the outcomes as feedback to the exploratory analysis adopted. To instantiate such a framework, we reproduce a simple workflow. As a first step, we introduce a birds-eye view, displaying the top 10 most frequent words (after lemmatization).



In a second moment of analysis, we look at the frequency ratio between different natural kingdoms, concluding that there is a prevalence of the group of minerals when compared to animals and plants. This is in part due to the high frequency of words such as “water” and “stone,” as previously demonstrated in the top 10 frequency. Delving deeper, we find that “stone” is present in 97% of the books that make up the corpus, with remarkable regularity in its distribution throughout the poet's work.



This is a significant insight given that minerals were often overlooked in previous literary research about Ramos Rosa's poetry. Beyond text analysis, this new evidence allows our project's team members to draft new close readings from an ecocritical perspective. These three examples will serve as the basis for our presentation at DH2024 and will be explained further on the occasion.

4. Literary Speculation

From our perspective, the present DH moment feels like the right time to expand the notion of creativity in literary studies and go beyond mixed close/distant and quantitative/qualitative methods in order to encompass speculative new approaches. Thus, in our project, the research methods comprise not only a conjunction and mutual feedback loop between the macro and the micro (Burdick et al. 2012; Jockers 2013; Bode 2017; Underwood 2019; Piper 2020; among others) but also an incremental rhizome of creative methods that include electronic literature as research-creation or practice-based research. In this context, we are particularly keen to demonstrate how electronic literature works can function as (re)interpretative devices.

Some scholars have pointed out that we can see “electronic literature as digital humanities” (Grigar / O’Sullivan 2021), and others have recalled it as a crucial practice toward what they named the “creative digital humanities” (Rettberg / Saum-Pascual 2020). Contributing to these still ongoing discussions, we will exemplify how practice-based research models in electronic literature gain when informed by previously prepared and structured data such as the data that we passed to the artists invited for our final curated exhibition. One of the examples that we will show in detail at the DH2024 conference is *ARR_GPT*, an artwork created by digital poet Rui Torres based on a custom GPT trained on Ramos Rosa’s poetry.

5. Final Considerations

Following Johanna Drucker’s idea of “speculative computing” (Drucker 2009), a key consideration in this context is also that “interpretation is performative, not mechanistic” (Drucker 2020: 90; see also Drucker 2013). While developing our speculative framework that uses the outputs of text analysis as new inputs for creating both data visualizations and electronic literature works, we were guided by the principle that each of these artifacts constitutes a new performative (re)interpretative device on their own. This is a critical idea that our exploratory project aims to contribute to pushing forward within the DH community.

ACKNOWLEDGMENT

This work was funded by the Portuguese Ministry of Education, Science and Innovation through FCT – Foundation for Science and Technology, I.P., within the scope of the exploratory research project “To See the Tree and the Forest. Reading the Poetry of António Ramos Rosa from a Distance”, DOI: <https://doi.org/10.54499/2022.08122.PTDC>.

Appendix A

Bibliography

1. **Bode, Katherine** (2017): “The Equivalence of ‘Close’ and ‘Distant’ Reading; or, Toward a New Object for Data-Rich Literary History”, in: *Modern Language Quarterly*, 78, 1: 77–106. DOI: [10.1215/00267929-3699787](https://doi.org/10.1215/00267929-3699787).
2. **Burdick, Anne, Johanna Drucker, Peter Lunenfeld, Todd Presner, and Jeffrey Schnapp** (2012): *Digital Humanities*. Cambridge: MIT Press.
3. **Cohen, Jeffrey Jerome / Lemenager, Stephanie** (2016): “Introduction: Assembling the Ecological Digital Humanities”, in: *PMLA/Publications of the Modern Language Association of America*, 131, 2: 340–346. DOI: [10.1632/pmla.2016.131.2.340](https://doi.org/10.1632/pmla.2016.131.2.340).
4. **Drucker, Johanna** (2009): *SpecLab: Digital Aesthetics and Projects in Speculative Computing*. Chicago: University of Chicago Press.
5. **Drucker, Johanna** (2013): “Performative Materiality and Theoretical Approaches to Interface”, in: *Digital Humanities Quarterly*, 7, 1 < <http://www.digitalhumanities.org/dhq/vol/7/1/000143/000143.html> > [22.05.2024].
6. **Drucker, Johanna** (2020): *Visualization and Interpretation: Humanistic Approaches to Display*. Cambridge: MIT Press.
7. **Eve, Paul Martin** (2019): *Close Reading with Computers: Textual Scholarship, Computational Formalism, and David Mitchell’s Cloud Atlas*. Stanford: Stanford University Press. DOI: [10.21627/9781503609372](https://doi.org/10.21627/9781503609372).
8. **Gould, Amanda Starling** (2017): *Digital Environmental Metabolisms: An Ecocritical Project of the Digital Environmental Humanities*. PhD Dissertation, Duke University. < <https://hdl.handle.net/10161/14457> > [22.05.2024].
9. **Grigar, Dene / O’Sullivan, James** (eds.) (2021): *Electronic Literature as Digital Humanities: Contexts, Forms, & Practices*. New York: Bloomsbury.
10. **Jockers, Matthew** (2013): *Macroanalysis: Digital Methods and Literary History*. Urbana: University of Illinois Press.
11. **Jørgensen, Finn Arne** (2014): “The Armchair Traveler’s Guide to Digital Environmental Humanities”, in: *Environmental Humanities*, 4, 1: 95–112 < <https://read.dukeupress.edu/environmental-humanities/article/4/1/95/26206/The-Armchair-Traveler-s-Guide-to-Digital> > [22.05.2024].
12. **Mallen, Enrique / Meneses, Luis** (2019): “Adjoined Conceptual Domains in the Bilingual Poetry of Pablo Picasso”, in: *Digital Studies/Le Champ Numérique*, 9, 1: 1-23. DOI: [10.16995/dscn.320](https://doi.org/10.16995/dscn.320).
13. **Piper, Andrew** (2020): *Can We Be Wrong? The Problem of Textual Evidence in a Time of Data*. Cambridge: Cambridge University Press.
14. **Posthumus, Stephanie / Sinclair, Stéfan** (2014): “Reading Environment(s): Digital Humanities Meets Ecocriticism”, in: *Green Letters*, 18, 3: 254-273. DOI: [10.1080/14688417.2014.966737](https://doi.org/10.1080/14688417.2014.966737).
15. **Posthumus, Stephanie / Sinclair, Stéfan** (2016): “Digital? Environmental: Humanities.” In *Routledge Companion to the Environmental Humanities*, edited by Jon Christenson, Ursula Heise, and Michelle Niemann, 369–77. London/New York: Routledge.
16. **Rettberg, Scott / Saum-Pascual, Alex** (2020): “Introduction: Electronic Literature [Frame]Works for the Digital Humanities”, in: *Electronic Book Review*. DOI: [10.7273/vyqe-dq93](https://doi.org/10.7273/vyqe-dq93).
17. **Tonra, Justin** (2021): *Write My Name: Authorship in the Poetry of Thomas Moore*. New York / London: Routledge.
18. **Travis, Charles / Holm, Poul** (2016): “The Digital Environmental Humanities—What Is It and Why Do We Need It? The NorFish Project and SmartCity Lifeworlds.” In *The Digital Arts and Humanities*, edited by Charles Travis and Alexander Von Lünen, 187–204. Cham: Springer International Publishing. DOI: [10.1007/978-3-319-40953-5_11](https://doi.org/10.1007/978-3-319-40953-5_11).
19. **Underwood, Ted** (2019): *Distant Horizons: Digital Evidence and Literary Change*. Chicago: The University of Chicago Press.

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