CRITICAL PHYSICAL GEOGRAPHY

The Field Guide to Mixing Social and Biophysical Methods in Environmental Research

Edited by
Rebecca Lave and Stuart Lane

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44. Textual analysis

Marcus A. Doel

Definition of textual analysis

Textual analysis comes in three main forms. First, approaches rooted in literary criticism, literary theory, and the philosophy of language. Meaning, intention, and reference are often key concerns. Second, approaches rooted in communication studies, media studies, and cultural studies. The social life and performative work of texts are often their main concerns. Third, the analysis of machine-readable texts using computer software, which exists in its own right and is beginning to be applied to the other two forms (e.g., language models and sentiment analysis). Given the ease with which texts can be transformed into a machine-readable format, and the widespread availability of powerful computers, the third form is fast becoming the dominant one. Heterogeneous texts are now routinely processed into homogenised datasets, much like any other mass-produced commodity.

The basics of textual analysis

Analysing texts manually takes a lot of effort, and quickly becomes unfeasible as the volume increases. Consequently, computer software is increasingly taking over the arduous work of textual analysis, just as it has taken over the laborious work of reading, writing, and calculation. Sophisticated software packages now enable automatic textual analysis, often with machine learning and artificial intelligence, which extract important qualitative information and statistically significant quantitative patterns. While such automation is very efficient and highly productive, it suffers from the same problems that bedevil other computational

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approaches, which arguably includes an inability to count, since what counts is rarely unambiguous and is often undecidable, as Derrida's (1992) attempt to count the yeses in James Joyces' *Ulysses* demonstrates so well. Such automation also arguably fails to take adequate account of the most important facets of any text—its context and its interpretation. On the one hand, as the etymology of the word makes plain, 'context' (woven together) is simply more text to be taken into account: every text refers to other texts. On the other hand, context is obviously more than merely textual, since every text refers to the world writ large. Since we are always working (with)in innumerable and illimitable (con)texts that are woven together without closure, textual analysis is arguably the most mixed up of mixed methods. It weaves together texts and contexts that always remain open to other texts and other contexts, and so demands further exegesis that may encompass every conceivable domain.

Textual analysis in depth

Rather than considering texts in the narrow sense of a piece of writing, such as a sign, a message, or a book, textual analysis considers texts in a much more expansive sense: as anything that makes sense or conveys sense; as anything that imparts meaning or solicits interpretation. Thus, when you start looking, texts appear everywhere. Many have been authored intentionally by humans, but most have not. Think, for example, of the genetic code or the signature of anthropogenic climate change. Think also of fieldwork activities that generate a wealth of textual material: from field observations and the collection of textual ready-mades, such as gathering newspaper articles and travel writing or sourcing palaeoenvironmental records (ice cores, tree-rings, and lake sediments, for example), to the production of transcripts and qualitative and quantitative datasets laden with meaning and significance (such as the proxy records of climatic change extracted from ice, trees, and sediments).

In keeping with this enlarged understanding of what constitutes a text, textual analysis tends to think expansively: every text refers to other texts and contexts with which it is interwoven. Indeed, recall that this is what the word 'context' means: woven together. Textual analysis

is therefore a quintessentially mixed methodology, since its textual and analytical expansiveness encompasses the textual and the contextual, which is sometimes called the 'extra-textual' (since it is outside the text, but in the strange form of a constitutive outside: the text both refers to and depends upon its outside, and without its outside it would collapse into nonsense). Just think of the extra-textual and contextual work that goes into discerning the climatic signature archived in a polar ice core, from chemical and statistical analysis to visualisation and publication, or the extra-textual and contextual work that goes into uncovering a history of violence written in bombed-out ruins and bulldozed rubble, by way of forensic architecture, for example (Weizman 2017).

The principle underpinning textual analysis is that everything in the world makes sense, and so everything calls out for interpretation. Sometimes, textual analysis aims to pin down the meaning and the sense of a text, often with reference and deference to the intention of its author, whether human or non-human. Oftentimes, however, textual analysis aims to multiply the meanings of a text, revealing the countless, contradictory, and incommensurable ways in which it can be taken up by different interpretative communities and transformed in different contexts.

Although textual analysis comes in a great many forms, the advent of powerful computer software for textual analysis is threatening to monopolise the field, especially in the social sciences, which seem to have a newfound appetite for digesting all manner of heterogenous texts into homogenised datasets suitable for computational and algorithmic processing. Digitisation is fast becoming the universal currency through which all texts become interchangeable: they can all be rendered fungible through the binary code. The conversion of unstructured texts into structured data is a complex process, typically involving chopping them up into meaningful parts so that they can be tagged and parsed. The resulting datasets can then be subjected to processes such as sentiment analysis, topic analysis, intention analysis, and data extraction, using classification and extraction rules that are either set by the researcher or else conjured up by the software itself. When coupled with statistical packages and modelling capabilities, automated textual analysis can even go beyond the data themselves through extrapolation, generalisation, and simulation, and they can be visualised like any

other product of algorithmic calculation. Word clouds, tag clouds, slope graphs, and Sankey diagrams are increasingly well-known forms of textual visualisation.

Why is textual analysis important?

Textual analysis is important because everything we study makes sense, conveys sense, and solicits sense. This is not to say that there is nothing other than bookish texts, human discourse, and linguistic expression, but rather that textual analysis investigates the embedment of texts within contexts. Whenever you are in a field, you will be embedded in countless contexts that command your attention and solicit your interpretation. So, it is imperative that you are well-versed in (con)textual analysis.

Relationship of textual analysis with other methods

The various forms of textual analysis obviously complement other methods that collect, generate, and work with texts of any description, such as the written accounts of ethnographic research (see Sayre, Chapter 34), the transcripts of interviews and focus groups (see Johnston and Longhurst, Chapter 32; Longhurst and Johnston, Chapter 27), the chatter of social media, and the records held within bureaucratic and palaeoenvironmental archives (see Cope, Chapter 22; King and Abbott, Chapter 28; Davis, Chapter 29): filing cabinets, ice cores, tree-rings, punch cards, and suchlike. Indeed, it is worth bearing in mind that textual analysis is not exclusively a qualitative research method, not only because text is so often quantified, both in real-world contexts and by researchers who make sense of them, but also because quantification and calculation are essentially textual: think, for example, of binary code, computer code, and mathematical hieroglyphics. Numbers, quantities, and statistics all make sense—in one context or another. They mean something and require interpretation.

Ethical issues and textual analysis

The first ethical issue to consider is that the selection of texts and contexts is necessarily selective and therefore partial, neglectful, and harmful. Here as elsewhere, research must take things out of context

and transplant them into other contexts, transforming them in the process. The second ethical concern is that the processing and analysing of texts is also selective and therefore patrial, neglectful, and harmful. The seemingly innocuous phrase 'textual analysis' masks a process of profound transformation in which texts are stripped of many contexts, and thus of meanings that are important for some communities and contexts. A third ethical concern is the increasing delegation of textual analysis to machines, such that texts risk becoming little more than grist to the post-industrial mill of data processing, with data-protection and commercial interest considerations being perhaps the most obvious worries. For example, it is worth recalling that a great many humans and non-humans have been forced into textual analysis and both violated and transformed in the process, such as the commercial extortion and re-engineering of the so-called 'genetic code' of viruses, plants, animals, and humans. When almost everything can be transformed into a digital text and compelled to yield its senses for processing and exploitation, we should regard that transmogrification as an overarching ethical concern and remain alert to the potential horror of such 'sinister inscriptions' (Black 2001; Fleischman et al. 2013). A final ethical concern is that the delegation of textual analysis to machines has profound implications for the workforce that sustains this sector of the digital economy, much of which is precariously employed and often highly alienated and strongly exploited (Posada et al. 2023).

Issues to be aware of in using textual analysis

Perhaps the key issue to bear in mind whilst undertaking textual analysis is that making sense and working with sense is so deeply ingrained in all of us that we can take the expertise required for granted. However, the various techniques of textual analysis that are available to us as researchers are as sophisticated, complicated, and exacting as any other methodological approach. They need to be learnt and practiced. Their ontological and epistemological underpinnings need to be studied and understood. And their strengths and weaknesses, and implications and consequences, need to be appreciated and reckoned with. Texts and contexts are at work everywhere, and we underestimate their significance at our peril.

Suggested further reading

For a discussion of textual analysis in geography, and more widely, see:

Doel, M.A. 2023. 'Textual analysis', in *Key Methods in Geography*, ed. by N. Clifford, M. Cope, and T. Gillespie (Sage Publications), pp. 245–261.

McKee, A. 2003. *Textual Analysis: A Beginner's Guide* (Sage Publications).

For open-access books that give a flavour of different forms of textual analysis, see:

Helgesson, S., H. Bodin, and A. Mörte Alling. 2022. *Literature and the Making of the World: Cosmopolitan Texts, Vernacular Practices* (Bloomsbury). https://doi.org/10.5040/9781501374180

Jones, R.H., A. Chik, and C.A. Hafner. 2015. *Discourse and Digital Practices: Doing Discourse Analysis in the Digital Age* (Routledge). https://doi.org/10.4324/9781315726465

McEnery, A. and H. Baker. 2017. *Corpus Linguistics and 17th-Century Prostitution: Computational Linguistics and History* (Bloomsbury). https://doi.org/10.5040/9781474295062

Schwandt, S. 2021. *Digital Methods in the Humanities: Challenges, Ideas, Perspectives* (Bielefeld University Press). https://doi.org/10.2307/j.ctv2f9xskk

Tonkin, E.L. and G.J.L. Tourte. 2016. *Working with Text: Tools, Techniques and Approaches for Text Mining* (Chandos Elsevier).

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Black, E. 2001. *IBM and the Holocaust: The Strategic Alliance between Nazi Germany and America's Most Powerful Corporation* (Little, Brown).

Cope, M., Chapter 22, this volume. 'Archival methods.'

Davis, D.K., Chapter 29, this volume. 'Historical ecology.'

Derrida, J. 1992. 'Ulysses gramophone: hear say yes in Joyce', in *Acts of Literature* (Routledge), pp. 253–309.

Doel, M.A. 2023. 'Textual analysis', pp. 245–261 in *Key Methods in Geography*, ed. by N. Clifford, M. Cope, and T. Gillespie (Sage Publications).

Fleischman, R.K., W. Funnell, and S.P. Walker. 2013. *Critical Histories of Accounting: Sinister Inscriptions in the Modern Era* (Routledge). https://doi.org/10.4324/9780203102749

Johnston, L. and Longhurst, R., Chapter 32, this volume. 'Interviews: structured, semi-structured and open-ended.'

King, G.E. and Abbott, P.M., Chapter 28, this volume. 'Geochronological methods.'

Longhurst, R. and Johnston, L., Chapter 27, this volume. 'Focus groups.'

Posada, J., G. Newlands, and M. Miceli. 2023. 'Labor, automation, and human–machine communication', in *The Sage Handbook of Human–Machine Communication*, ed. by A.L. Guzman, R. McEwen, and S. Jones (Sage Publications), pp. 384–391. https://doi.org/10.4135/9781529782783

Sayre, N.F., Chapter 34, this volume. 'Participant observation and ethnography.'

Sutherland, K. 2011. 'Marx in jargon', in *Stupefaction: A Radical Anatomy of Phantoms* (Seagull), pp. 26–90.

Weizman, E. 2017. *Forensic Architecture: Violence at the Threshold of Detectability* (Zone). https://doi.org/10.2307/j.ctv14gphth