

movements back and forth, installing processes of reactivation on the past–present axis, or, in Doruff's contribution, in the (translocal) event itself. While Auslander discusses recorded performance, and Doruff refers to improvised music, in both cases the interface channels and filters the distribution of affective intensities.

Interfaces of Performance is a book worth reading. Fortunately, developments in the field of performance do not live up to the speed of technological innovations; despite the publication date (2009) the essays have not lost their relevance. A few critical remarks are in place though. The book argues for new paradigms but fails to include some of the paradigms that are already there. Apart from a small hint, Bruno Latour's actor-network theory is remarkably absent, as is John McKenzie's theory on technological and organizational performance, introduced in *Perform or Else* (Routledge, 2001). The discourse on intermediality in performance is hardly referenced, part of which explicitly addresses the redistributive qualities of in-between zones, and Steve Dixon and Gabriella Giannachi deserve more than sideline appearances in commentaries. Next, the argument for creative theory is of course valid, however, I find some of the explicitly creative contributions to have far less 'interfacing' potential than the perhaps more conventional essays. But all in all *Interfaces of Performance* is a rich collection, full of stimulating ideas.

Although theatre and performance often appear to be on the marginal side of contemporary society, this collection proves that performative practices are precisely the platforms for critical and playful explorations of how (digital) technology stages and transforms perception and understanding. This potential materializes in what Primavesi names a strategy of exposure, in his discussion of Gob Squad, a company that often hinges on the imperfection and failure of technology, in order to make room for cooperative experimentation. It is also a strategy of moving beyond the spectacle of society and simulacra, as Maria X and Matt Adams jointly observe in their inspiring dialogue; of carrying out virtual experiences into the real. While interfacing with digital identities and technologically enhanced

environments, it turns out that it is (still) the potential of the lived experience to investigate and invest in our modes of engagement with the world.

Liesbeth Groot Nibbelink
Utrecht University, Theatre Studies/Department of Media and Culture Studies, The Netherlands

doi:10.1093/llc/fqr041

Advance Access published on 7 October 2011

The Lambda-structure of Texts.

Ioan-Iovitz Popescu, Radek Čech, and Gabriel Altmann. *Lüdenscheid: RAM, 2011. 181 pp. ISBN 978-3-942303-05-7. €45 (paperback).*

The book under review, jointly written by three authors with a pronounced expertise in the field of quantitative linguistics and text analysis, is primarily devoted to the analysis of lexical frequency structures in texts. In a way, the book may be said to represent part of an ongoing research project, integrating earlier findings (Popescu *et al.*, 2009), and being elaborated in ongoing research (Popescu *et al.*, 2010). The authors consider it to be a major task of the book to develop, present, and introduce new methodological instruments to quantitative analyses of texts. First and foremost, they concentrate on the frequency occurrence of words, i.e. word forms and/or lexemes, or lemmata. On the one hand, this concerns aspects of lexical rank frequency distributions, on the other hand, issues of lexical richness, derived from such data for purposes of individual stylistics, authorship attribution, quantitative text typology, etc. As is referred to in detail in the introductory part (p. 1ff), a whole variety of indices and indicators have been developed in the past, to calculate lexical richness on the basis of type-token ratios, percentage of hapax legomena, or various specific ratios based on lexical inventory used in a given text. However, all of these indicators suffer from a major theoretical flaw, namely their dependence on sample size, i.e. on the length of the text(s) under study, which renders them rather useless, or eventually even misleading, for any kind of comparative approach.

By way of a solution to this problem, the authors suggest to use what they term the *lambda indicator* of a text. In fact, the particular value of the book under review has to be seen in its offering a mathematical tool for specific comparisons of texts with regard to their lexical composition, thus allowing for decisions as to significant or non-significant differences across texts.

A detailed mathematical derivation or explanation of this indicator can be omitted here: its calculation is explained stepwise in the book (pp. 1–4ff.), and knowledge of school mathematics is sufficient to reproduce it. Specifically, the lambda indicator includes but the following two components:

- (1) Arc length, which is but the sum of Euclidean distances between two neighbouring rank frequencies, and which has been introduced into the field of quantitative text analysis by two of the authors before (Popescu *et al.*, 2008).
- (2) Sample size, i.e. text length (N), in its logarithmized form, here on a decimal basis (\log_{10}).

As is convincingly proven by the authors (p. 10ff), the resulting lambda indicator is not only ‘immune’ to text length—which is its crucial methodological advantage—there is also no loss of information on the lexical rank frequency structure and richness of a given text, as compared to indicators used in the past.

The authors demonstrate this very clearly in the course of their book, which consists of 11 chapters, in which no less than 1,185 texts from 35 different languages are analysed and tested with regard to the lambda indicator’s usefulness for various kinds of ‘pragmatic’ applications.

Thus, the lambda indicator is analysed with regards to different texts in general (Chapter 3), individual authors (Chapter 4), and different text types (genres) from various languages (Chapter 5). In Chapter 6, specifics of the lambda indicator are analysed on the basis of a Slavic parallel corpus, thus providing some kind of a scale for structural similarity across languages. Chapter 7, also focusing on Slavic parallel texts, is devoted to specifics of frequency structure within a given text: successively analysing the chapters in a novel, it can be seen

that their overall frequency profile is similar, of course, but that there are language specific differences, which the authors explain with morphological specifics of the given languages (particularly the degree of analyticism/syntheticism). Moreover, some additional methodological devices are presented, displaying specific profile differences in terms of absolute difference between individual sequences of the lambda indicator and so-called ‘runs’, based on positive versus negative deviations from the general profile.

Chapter 8 makes use of the lambda indicator for diachronically oriented analyses, including studies on the historical development of a specific text type as well as on the development of texts written by an individual author over different periods of time.

Chapter 9 is devoted to the question of changes in the lexical frequency structure during child language acquisition. Notwithstanding the problem to find an appropriate data basis in approaching this question, the authors show that there seems indeed to be a successive and continuous increase of the lambda indicator with increasing age, gender differences obviously playing no crucial role.

In Chapter 10, entitled ‘Pathological Texts’, the lambda indicator is calculated for Dadaistic texts, which the authors considered to be representative of some kind of ‘disturbed’ language, in which ‘normal’ words are mixed with nonsense words, and in which syntax and morphology clearly deviate from ordinary language. As a result, despite these intended violations, these texts do not differ from ‘normal’ texts with regard to their lambda structure.

Finally, in the concluding Chapter 11, the authors point out the general importance of the lambda indicator, and claim it to be a relevant new indicator for the study of rank frequency distributions of lexemes and word forms.

To summarize, one can say that indeed an important theoretical advantage of the lambda indicator has to be seen in its ability to describe the lexical richness of texts, independent of text size. It is certainly a positive fact to be mentioned that with the lambda indicator, it seems to be well possible to compare different authors, texts, text types, and languages, and to obtain deep insight in the dynamics

of text processes (mainly, changes of frequency structures). In addition to extensive and helpful references, the book contains author and subject indices, as well as a comprehensive appendix with all data used for analysis, which allows for a stepwise reproduction of the calculations made in the book—the more since all relevant statistical procedures are explained lucidly and easy to reproduce.

Without a doubt the book is of high relevance and importance for all linguists and literary scholars, who are interested in quantitative text analysis, stylistics, authorship attribution, text and language typology, and related issues.

For some issues, deeper study of related research literature may alleviate the understanding of the broader horizon of this book's perspectives (e.g. Popescu *et al.*, 2009); this holds particularly true, among others, for relations of the lambda indicator with further statistical text measures proposed by the authors elsewhere, such as e.g. the *h*-point or arc length. Yet, it is important to emphasize again that the calculation of the lambda indicator and further statistical characteristics related to it ask but for a minimal amount of mathematical knowledge, which renders the book and the methods and procedures described in it, a valuable and important contribution for any reader interested in the solution of problems outlined above.

References

- Popescu, I.-I., Mačutek, J., and Altmann, G. (2008). Word frequency and arc length. *Glottometrics*, 17: 18–42.
- Popescu, I.-I., Altmann, G., Grzybek, P. *et al.* (2009). *Word Frequency Studies*. Berlin/New York: Mouton de Gruyter.
- Popescu, I.-I., Mačutek, J., and Altmann, G. (2009). *Aspects of Word Frequencies*. Lüdenscheid: RAM.
- Popescu, I.-I., Čech, R., and Altmann, G. (2010). Structural conservatism and innovation in texts. *Glottology*, 3(2): 43–63.

Peter Grzybek and Emmerich Kelih
Institute for Slavic Studies, University of Graz, Austria

doi:10.1093/llc/fqr051

Advance Access published on 17 January 2012

Art Practice in a Digital Culture
Hazel Gardiner and Charlie Gere (eds).
Farnham: Ashgate, 2010. xv + 189 pp.
ISBN 978-0-7546-7623-2. £55 (hardback).

The thought manifests as the word.
The word manifests as the deed.
The deed develops into habit.
And the habit hardens into character.
So watch the thought and its ways with care.
And let it spring from love, born out of
concern for all beings.

—Ascribed to the Buddha in
The Dhammapada

Ours is an age of unfortunate metaphors that structure our lives in profound ways. In 1990, Tim Berners-Lee wrote a software program called WorldWideWeb, which has after two decades conceptually hardened from the original descriptive metaphor into our collective ontological concept of the Internet as a web. *The web* is often our colloquial usage for the collective use of emerging telematics technologies. *The web* is an unfortunate metaphor since it suggests a structure of entrapment, a snare, a prison which immobilized the prey and results in immanent death. This analogy of course calls into question who or what is the spider (also the name for rather ominous software) and what/who/how/why is the web in light of the human experience of this global telematic interface? Is the interactive user of this web trapping, trapped or inveigled into a trap while convinced he/she is the hunter?

As the above quote attributed to the Buddha suggests, the path from the thought to the formation of our character is one that benefits from both empathy and reflective skepticism. Imagine for a moment if Berners-Lee would have titled the software *Enquire*, which was the name of an earlier application he wrote? Would this metaphoric thought have changed our collective use of information and communication technologies (ICT)? Titles are therefore significant in changing our perception