

A dictionary in the dynamics of epidemiology

Um dicionário na dinâmica da epidemiologia

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ABSTRACT: This text synthesizes the impact of the book “*A Dictionary of Epidemiology*” in its two most recent editions (2008 and 2014). We related the reviews, discussions, and comments on the book in the specialized literature, as well as interventions of Miquel Porta, the editor of the publication, in the debate. We emphasized the importance of the dictionary in the dynamics of epidemiology as a source of bonding and debate for the professional environment, both before and after its publication. Finally, we offer suggestions on the new directions that may be taken in future editions of this volume.

Keywords: Epidemiology. Dictionary. Concept formation. Consensus. Education, public health professional. Epidemiologic studies.

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RESUMO: Este texto sintetiza a repercussão do livro “*A Dictionary of Epidemiology*” em suas duas mais recentes edições (2008 e 2014). Foram relacionadas as resenhas, debates e comentários sobre o livro na imprensa especializada, bem como as intervenções no debate de Miquel Porta, editor da publicação. Procura-se sublinhar a importância do dicionário na dinâmica do meio profissional, como elemento de aglutinação e debate, tanto antes como depois de sua publicação. Por fim, são apresentadas sugestões quanto aos novos rumos que poderão vir a ser tomados nas futuras edições desse volume.

Palavras-chave: Epidemiologia. Dicionário. Formação de conceito. Consenso. Educação profissional em saúde pública. Estudos epidemiológicos.

A dictionary of epidemiology! With this suggestive title, and sponsored by the International Epidemiological Association, the book was first launched by John Last, from the University of Ottawa, and a team of collaborators in 1983¹. New editions came subsequently, increasing the number of terms and renewing its content: 1987², 1995³, 2001⁴, 2008⁵, and 2014⁶. For every new edition, the informative, formative, and normative predicates of this initiative were celebrated by the specialized literature.

When the fifth edition was launched in 2008, there had been important changes regarding the previous ones. Seven years had gone by since the launch of the fourth edition; the book had more pages. New items were added; many were revised. John Last, the prominent editor of the four first editions, stepped back and passed on the editorial leadership to one of his former collaborators, Miquel Porta, coordinator of the cancer clinical and molecular epidemiology unit at the *Institut Hospital del Mar d'Investigacions Mèdiques* (IMIM), in Barcelona. The world had also changed a lot, as observed by the new editor in the preface. The huge growth of the Internet, the appearance of Google and Wikipedia also changed the way searches were made and our relationship with dictionaries.

As a strategy to elaborate the 5th edition, Miquel Porta opened a public call requesting the intervention of professionals, who might propose changes in established items and also suggest new ones. At the end of this process, 224 collaborations were registered (more than 400 in the sixth edition), providing ideas for the team of editors to systematize the text.

Professionals had a good reaction to the fifth edition. Many scientific journals appreciated the publication and praised it⁷⁻¹². In fact, the dictionary aimed at facilitating the communication among health professionals; it provided references for education and research; and favored the report of epidemiological findings. These reviews highlighted the different qualities of the book and its different forms of use. In addition, they investigated the opinion of some possible readers: the professor and the experienced researcher, the student who begins to work harder on the discipline, and the health professional dedicated to other specialties.

But there has also been an important critique. Olli Miettinen¹³, professor at the McGill University and outstanding reference in the epidemiological field, disdained the long preface,

rejected the public consultation to colleagues without a consistent application to epidemiological theory and criticized the concept of several important terms of the book, such as epidemiology, disease, case, etiology, population, incidence, prevalence and rate, risk factor and cause, study design, intervention, efficacy and effectiveness, odds ratio, and *p*-value.

Miquel Porta¹⁴ did not want to make a counterargument about the definition of specific items; but he replied to the criticism, maybe too strongly. According to him, Prof. Miettinen would have substantially missed in terms of innovation and influence of the health sciences in the past 25 years. Instead of reviewing the dictionary, Miquel Porta went on with his replica, Miettinen stated his own ideas, because his text only made reference to his own publications. Nonetheless, Miettinen had not even noticed that, for many of the words whose concept he had criticized, the group of editors of the dictionary had quoted and made extense reference to the texts he had written.

Miettinen's¹⁵ rejoinder heated up the debate. In a short note, he complained that Miquel Porta had attacked the critic, instead of considering the critique. He concluded that the work carried out to define the epidemiological concepts required a more skilled interlocutor, recommending that Miquel Porta should be replaced for the next edition of the dictionary. The unexpected proposal and the tone of the polemic led the heads of the *International Epidemiological Association* to intervene¹⁶, valuing the editorial work of Miquel Porta and reassuring the correctness of indication.

Indeed, Miquel Porta continued his work and launched the sixth edition of the dictionary in 2014⁶. Again, the result was favorably accepted and its many positive qualities were emphasized in scientific journals of the field¹⁷⁻²⁰. In spite of that, new reviews came out, and new replicas were made by the editor.

One first issue brought up a question that had been already pointed out at the time the previous edition was launched^{8,19}: it was necessary to provide open access to the dictionary. Kogevinas²¹ did not understand why the text was not in open access these days, since this would limit its use considerably. It was a shame that the huge effort to elaborate the text could not result in its maximum use. To that, Miquel Porta²² responded immediately, ensuring that the book could already be bought in different electronic formats, and that the International Epidemiological Association would facilitate the access to its publications to low-income countries. But offering the dictionary in open access would lead to additional publishing costs.

As Miettinen had done the previous edition, Raj Bophal; from University of Edinburgh; scrutinized different core concepts in the discipline; and pointed out to inconsistencies, absence, and deficiencies²³. Among other definitions, he assessed the concepts of epidemiology, incidence and prevalence, causality and causal diagrams, ecological and case-control studies, Mendelian randomization, Poisson regression, relative risk, and confidence interval. Unlike Miettinen, however, Raj Bophal was cordial in his review, and justified that the elaboration of a dictionary is a work in constant progress, a process that cannot be concluded. And he finished by observing that every one of those who love epidemiology should be thankful to Miquel Porta and John Last, whose passion and energy have been the leading force to the success of successive editions of the dictionary.

Miquel Porta²⁴ responded politely, and emphasized, in the title of his replica, that the review was positive. In the first line, he reinforced the fact that it was cordial. Even so, he made a counterargument about three of the concepts discussed by Raj Bophal: causal diagrams, case-control studies, and relative risk. But his silence on the other items may be even more significant than the replicas. Like every good book, the dictionary is sustained by itself; the editor does not need to justify every decision that may be questioned.

The same consideration seems to have been given to the following review; that is, by not replying, Miquel Porta seems to have agreed that the text in the dictionary is sufficient, not requiring further arguments. Paul Fine, from the London School of Hygiene & Tropical Medicine, came in public²⁵ to reflect on the concept of epidemiology, using the definition in the sixth edition as a starting point.

The elaboration of a dictionary requires investigating the professional field to confirm the possible consensus regarding the concepts and definitions, which should be reflected in the text. The dictionary is expected to show the language that is in fact used, and not the one that should be used, irrespective of how much distinctive may be the opinion of whoever wants to define what should or should not be used. To confirm the language that is effectively used, Miquel Porta examined 800 items in literature, which were referenced in the sixth edition, he opened a wiki-like public call and talked to nearly 250 colleagues that were nominated in the introductory pages.

But this huge effort to organize the professional field is not over when a new edition of the dictionary is published. Some experts manifest their suggestions through previous consultations; others give an opinion later, when the text is already printed. Paul Fine²⁵ declared that the obsession with definitions is a characteristic of epidemiology, since it always involves complex conditions for observation, a search for appropriate resources for inference, and many traps and biases that can lead to error. In other words, the polemic regarding epidemiological concepts brought up by the dictionary is part of the specialty's dynamics.

Epidemiologists are trained to be demanding about conceptual and methodological matters. So, it is expected that the different editions of the dictionary have led to debate. And it is positive that the editor showed aptitude and good will to interact with the professionals, both while preparing each new edition and after its publication.

The dictionary has proven to be an important instrument for the dynamics of epidemiology. Its open access offer will continue to be demanded by the professionals; this goal will surely remain as a challenge to be overcome. The constitution of thematic networks to elaborate specialized glossaries is also a perspective for the future. Many epidemiologists are mostly dedicated to specific themes: epidemiology of cancer, of communicable diseases, heart diseases, mental health, oral health, physical activities, among others. These ramifications of epidemiology surely shares the concepts in the dictionary; but they have their own concepts and specific methods, whose definition in specific publications could improve their professional development even more.

REFERENCES

1. Last JM, ed. A dictionary of epidemiology. New York: Oxford University Press; 1983.
2. Last JM, ed. A dictionary of epidemiology. 2nd ed. New York: Oxford University Press; 1987.
3. Last JM, ed. A dictionary of epidemiology. 3rd ed. New York: Oxford University Press; 1995.
4. Last JM, ed. A dictionary of epidemiology. 4th ed. New York: Oxford University Press; 2001.
5. Porta M, ed. A dictionary of epidemiology. 5th ed. New York: Oxford University Press; 2008.
6. Porta M, ed. A dictionary of epidemiology. 6th ed. New York: Oxford University Press; 2014.
7. Morabia A. Book review. *Prev Med* 2009; 48(4): 403-4.
8. Antunes JLF. A dictionary of epidemiology. *J Epidemiol Community Health* 2009; 63(5): 337.
9. Fraser A. A dictionary of epidemiology: fifth edition. *J Antimicrob Chemother* 2009; 63(6): 1302.
10. Harvey I. Book review: a dictionary of epidemiology. *Public Health* 2009; 123(8): 576.
11. Samet JM, Wipfli H, Platz EA, Bhavsar N. A dictionary of epidemiology, fifth edition. *Am J Epidemiol* 2009; 170(11): 1449-51.
12. Javier Nieto J. A dictionary of epidemiology. *Gac Sanit* 2009; 23(3):255.
13. Miettinen OS. Book review. *Eur J Epidemiol* 2008; 23(12): 813-7.
14. Porta M, Olli S, Miettinen and the I.E.A. dictionary of epidemiology. *Eur J Epidemiol* 2009; 24(11): 713-4.
15. Miettinen OS. Ignoring critique, attacking the critic. *Eur J Epidemiol* 2010; 25(2): 149.
16. Olsen J, Pearce N, Victora CG, Ebrahim S. The IEA Dictionary and who should be the editor. *Int J Epidemiol* 2010; 39(2): 630.
17. Hartge P. A dictionary of epidemiology, sixth edition. *Am J Epidemiol* 2015; 181(8): 633-4.
18. Tilson HH. Media reviews and reports. A dictionary of epidemiology (sixth edition). *Am J Prev Med* 2014; 47(6): e14.
19. Floud S. Continuing the pursuit of a common language: the sixth edition of A Dictionary of Epidemiology. *Eur J Clin Invest* 2014; 44(11): 1121.
20. Richiardi L. Book review. A Dictionary of Epidemiology. *Int J Epidemiol* 2015; 44(6): 373-4.
21. Kogevinas M. Make the Dictionary of Epidemiology open access. *Int J Epidemiol* 2015; 44(2): 721.
22. Porta M. Author's response: cognitive devices and dictionaries: substance, format and funding. *Int J Epidemiol* 2015; 44(2): 721-3.
23. Bhopal RS. A dictionary of epidemiology, sixth edition. *Ann Epidemiol* 2015; 25(1): 63-4.
24. Porta M. Comments regarding the positive review of "A Dictionary of Epidemiology". *Ann Epidemiol* 2015; 25(4): 303.
25. Fine P. Another defining moment for epidemiology. *Lancet* 2015; 385(9965): 319-20.

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