

Newspeak

Newspeak for epidemiologists

Clarence C Tam

Our limited vocabulary should not constitute a prescriptive curriculum, but instead point to our insufficiencies and our need to expand the field of epidemiology

In summation, I have only one question: is Latin dead?
Max Fischer¹

It is said that the Canadian Inuit have more than 50 words for “snow”, but none for “pollution”. In fact, the romantic idea that the Inuit can differentiate between 50 types of snow is not strictly true; the multitude of snow words is related to the way in which suffixes are sequentially added to root words in the Inuktitut language to create new expressions. Nevertheless, this idea serves to show that, although in certain cultures we have many words to describe things that are relevant to our everyday experiences, we tend to lack words for concepts with which we are unfamiliar. To give another example, there is apparently no formal term for “dyslexia” in the Chinese language, a condition that is described with a four-character phrase (阅读障碍) roughly translating as “reading impairment”. This is partly due to the relatively recent recognition of reading dyslexia in Asian countries, itself related to the lower prevalence of this condition in these settings.² This example is interesting because it highlights cultural differences in dyslexia and because the terms themselves tell us much about how meaning is constructed in different languages. Recent evidence shows that different parts of the brain are affected in reading dyslexia among Chinese as compared with English school children.³ The higher prevalence of reading difficulties among speakers of alphabetic languages such as English is thought to be in part due to the fact that letters must first be processed into sounds, and combinations of letters into combinations of sounds that carry meaning. English poses particular difficulties at an early age, because of the large number of irregular sounds; speakers of stricter phonetic languages, such as German, tend to be more advanced readers up to a certain age.⁴ By contrast, speakers of logographic languages such as Mandarin are taught from an early age to ascribe sound and meaning directly to individual characters; a knowledge of some 3500 characters is required for a working grasp

of the language. There are, in fact, a limited number of possible sounds in Mandarin, the difficulty being in differentiating between homophones, characters carrying the same sound but different meaning. Often, the characters themselves convey clues as to meaning and/or sound. Thus, meaning in Mandarin is derived primarily from direct interpretation of pictures. In English, meaning is derived from the roots of words, dyslexia, for example, obtaining its meaning from its Greek roots for “abnormal” and “speech”. A true understanding of English words and their meaning is crucially dependent on a grasp of their roots. In this respect, the educational focus away from classics such as Latin in favour of more vocational subjects is a serious concern. At stake is not merely the loss of a language that has not been in common use for centuries (and that many consider already dead), but rather our ability to understand languages that we use every day. While training school children to contribute to our societal structure, we risk taking away the tools with which to critically appraise it.

Don't you see that the whole aim of Newspeak is to narrow the range of thought? In the end we shall make thoughtcrime literally impossible, because there will be no words in which to express it.
Syme⁵

This idea is brought into vivid focus in George Orwell's *1984*. Orwell's totalitarian state maintains control through warmongering, propaganda, surveillance and violence, and also through the principle of Newspeak, the invention of a new language constructed not by the creation of new words but by the destruction of old ones. By taking away the very language that would enable individuals to describe concepts considered irrelevant to their daily lives, the state prevents dissent by denying the population the ability to formulate thoughts conflicting with Party doctrine.

The concept of Newspeak is similarly, if not so extremely, applicable to epidemiology.

A quick glance through a standard epidemiology text reveals no fewer than 27 different entries (undoubtedly not comprehensive) related to “bias”.⁶ That epidemiologists should have such a rich vocabulary with which to describe different types of bias speaks to the challenges of epidemiological research and our difficulty in making error-free measurements. In other areas we have been far less imaginative⁷⁻⁸: the same text contains no entry for “cause” and a single entry for “exposure”, terms that epidemiologists (mis)use every day. One could argue that these terms have a generic, all-encompassing quality, obviating the need for further refinement; a “cause” is an ideal that we aspire to identify, and anything, including an outcome, can be an “exposure”. In fact, philosophers have for centuries struggled to define the concept of a “cause”, in some cases arriving at the conclusion that the endeavour is itself a lost cause. As for “exposure”, its use in epidemiology (commonly as a synonym for “risk factor”) appears to have been adulterated; of the four definitions given by Last, none pertain to it as describing the factor to which someone is “exposed”. The etymology of “expose”, as in “to leave without shelter” or “to lay open to attack”, is informative in analysing the epidemiological use of “exposure”. Exposures in epidemiology are implicitly factors that act from the outside. This has obvious historical relevance in, for example, visitations by infectious agents, environmental pollutants and radioactive fallout. However, its use appears to have been unimaginatively extended to include all manner of things, many having no obvious externality.

We are not only exposed to processes, they are imposed upon us. That is to say, if there are indeed destructive processes that one risks suffering as a contingent problem, that is, a condition that may or may not happen, there exist on the other hand occurrences to which we are not exposed as eventualities, but that are imposed upon us permanently.
Jaime Breilh⁹

The Ecuadorian epidemiologist, Jaime Breilh, offers insightful critique of the concept of “exposure” in epidemiology. In analysing exposure, he argues that “if we do not disaggregate a few possibilities, our spectrum of analysis may be reduced to that to which we are exposed as a matter of contingency [that is, conditions that may or may not happen]”.⁹ Breilh differentiates between at least three types of “exposure” processes: events with some probability of occurrence, chronic

or daily processes, and permanent processes inherent to one's way of life. An example of the first would be a travelling salesman who happens to visit an orchard on the day it is being fumigated. An example of a chronic process is that of a farm worker who is exposed to pesticides as part of his or her daily work, and an example of a permanent process is the consequence of the inadequate wage that ties the worker to longer working hours in unsanitary conditions.⁹ To Breilh, this distinction is important because it enables us to differentiate between those processes to which we are exposed with some probability and those that are inherent and invariant without effecting some change to our way of life. In fact, these latter processes are, more often than not, not exposures at all, but would be better termed "imposures".⁹ People rarely live in poverty by choice, and one is no more exposed to poverty than they are exposed to the colour of their skin; poverty is something that one lives and breathes on a daily basis.

Breilh critiques not only our restricted view of "exposures", but also our narrow, disease-based view of health; although we can describe thousands of clinical conditions in intricate symptomatological, pathophysiological and molecular detail, we have yet to come up with a concrete definition of "health", never mind factors, conditions and processes

that lead to it. This, after all, is the ultimate aim for those of us wanting to work in "public health" rather than merely "public disease". The practice of epidemiology is, however, coaxed in negative language: "mortality", "morbidity", "death", "disease", "risk" and "survival". Our major contributions to society are based not on informing the public what they could do to lead healthful and fulfilling lives, but what they should do and what they must not do in order to avoid succumbing to death and disease. Language is important because it is more than merely a means of communicating these ideas; language is inherently linked to the boundaries of thought. It determines how we frame questions and what we consider to be legitimate and relevant objects of enquiry. Our limited vocabulary should not constitute a prescriptive curriculum for our understanding of health concerns but should instead point to our insufficiencies, to our need to expand the field of epidemiology to investigate those processes that we have yet to understand and that we lack the language to describe adequately. At heart is not simply the invention of new words, but the development of a language to describe ideas that epidemiologists have for too long overlooked, a language to describe the world in which we live, to describe how the world is structured, to describe how that structure affects the lives and the health

of individuals and populations, and to describe how it can be changed for the better.

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Competing interests: CCT is an epidemiologist and is frequently exposed to inappropriate use of (epidemiological) language, which he himself imposes upon his peers. The translations of the Jaime Breilh text are all his own.

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