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Editorial

Since the publication of its first issue in 1970, *TPB* has been dedicated to the view that theoretical work is central to advancing the study of the biology of populations. Theory in population biology produces mathematics and insight that explain the features of biological phenomena, generates predictions for empirical analysis, motivates statistical methods for analyzing biological data, and clarifies the intellectual foundations of the field. *TPB* has provided a leading forum for theoretical investigations in the areas of demography, ecology, epidemiology, evolution, and genetics, nurturing the expansion of scientific communities that place a strong emphasis on theory. Its papers have contributed new models, new analyses of existing models, and new treatments of both general phenomena and particular features of the population biology of specific organisms. Contributions have devised and applied approaches that span a range of mathematical, statistical, and computational techniques and that have inspired developments in the mathematical sciences. The journal has adopted its values from both mathematics and biology, emphasizing technical rigor, depth, and novelty in the theory, and genuine biological motivation and relevance.

The editorial transition provides an occasion to reflect on the subject matter of the journal, as revealed through a brief analysis of the titles of its past publications. In the spirit of a study of population dynamics, we can tabulate word abundances over time, viewing each word as one of many forms present in a population.

I extracted the titles of all *TPB* publications from 1970 to 2012 and generated word abundance lists. Excluding common nontechnical words, the four words that appear in the largest number of *TPB* titles are *population*, *models*, *model*, and *populations*, illustrating a clear and consistent focus on the core subject of *population models* (Table 1). Among other frequently used words, we can detect answers to basic questions posed in a typical modeling investigation (Fig. 1).

Table 1
The most frequently occurring words and word pairs in *TPB* titles.

Rank	Single words		Pairs of words	
	Word	Number of publications	Word pair	Number of publications
1	Population	323	Population dynamics	57
2	Models	266	Population models	32
3	Model	263	Population genetics	24
4	Populations	207	Population size	24
5	Dynamics	197	Assortative mating	23
6	Selection	195	Population growth	23
7	Evolution	169	Natural selection	20
8	Genetic	109	Linkage disequilibrium	19
9	Effects	96	Sexual selection	18
10	Stochastic	80	Finite populations	16
11	Competition	79	Subdivided populations	15
12	Theory	77	Genetic drift	15
13	Evolutionary	67	Sex ratio	14
14	Neutral	62	Optimal foraging	13
15	Optimal	62	Overlapping generations	13
16	Spatial	62	Random mating	13
17	Species	62	Variable environments	12
18	Stability	62	Neutral alleles	11
19	Effect	60	Population model	11
20	Environments	60	Spatial heterogeneity	11
21	Gene	60	Subdivided population	11
22	Mutation	58	Evolutionarily stable	10
23	Systems	58	Frequency-dependent selection	10
24	Growth	57	Island model	10
25	Mating	57	Life history	10
26	Size	56	Plant populations	10
27	Distribution	53	Selection models	10
28	Random	53	Structured populations	10

To produce the rankings, I examined 2029 entries from the complete list of *TPB* titles (volume 1 issue 1 through volume 82 issue 3), tabulating the number of titles containing an exact match to each word or word pair. Minor items such as corrigenda were excluded from the list of publications, and punctuation marks other than apostrophes and hyphens were removed from each title. Common words such as prepositions and articles are excluded from the table.

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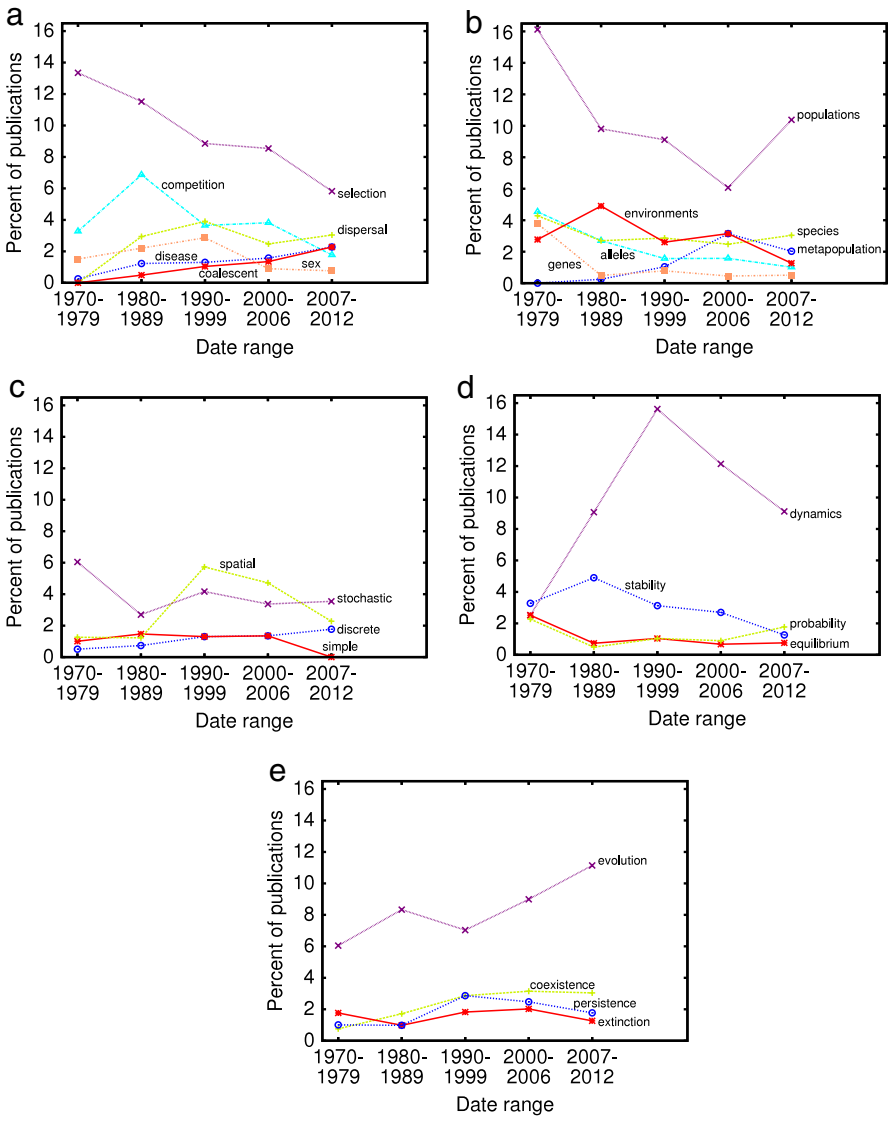

Fig. 1. The percentage of *TPB* publications within specified time intervals that contain a given word in the title, for different categories of words. (A) Biological phenomena. (B) Levels of biological organization. (C) Types of model. (D) Features of mathematical models studied. (E) Aspects of biological phenomena studied. Time intervals were selected to have similar numbers of publications (1970–1979, 397; 1980–1989, 408; 1990–1999, 384; 2000–2006, 445; 2007–2012, 395). Words were chosen for display from a list of 128 words appearing in more than 1% of titles. Although many words adopt multiple meanings across titles, for illustration, a single usage was associated with each word.

1. What biological phenomenon is of interest?
2. What level of biological organization does the phenomenon concern?
3. What type of model is used to examine the phenomenon?
4. What mathematical feature of the phenomenon is studied under the model?
5. What biological aspect of the phenomenon is explained by the mathematics?

The five panels of Fig. 1 depict representative terms that answer these questions, tracing their frequencies across different time intervals. For each of the five questions, we can identify a collection of central concepts that have persisted throughout the history of the journal. *TPB* has displayed a stable coexistence of its set of phenomena of interest and its set of fields of emphasis. Although most of the common terms have appeared in all time intervals, high frequencies have been attained by some newer terms, such as *metapopulation* (Fig. 1(B)) and *coalescent* (Fig. 1(C)). Frequencies for other terms have decreased; it is particularly tempting to speculate about forces that might underlie a decline in *selection* (Fig. 1(A)). A curious extinction is also observed, as no recent *TPB* title has described a model as *simple* (Fig. 1(C)).

Marc Feldman has served a remarkable 41-year tenure at the helm of *TPB*, building the journal from its early days, maintaining the high quality of its content, and cultivating an enduring *TPB* community. I would like to both congratulate Marc on his success and express my sincere appreciation for his extraordinary service. As *TPB* continues to promote and expand its niche in the current publishing environment, it is strengthened by its clarity of scope and style, the high standard of its authors' contributions, and the dedicated effort of its outstanding reviewers and editorial board. I am honored to have the opportunity to advance the journal's tradition.

Noah A. Rosenberg
Stanford University, United States
E-mail address: noahr@stanford.edu.