



140 k vs 40 k! Does this journal need short papers?

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What does 140 k versus 40 k reveal?

It has been reported, using *Scopus* data, that the number of short papers (also known as “non-source items” in the Web of Science) published in the United States in 2020 was about 140,000 (about 18.5% of its total publication). The corresponding number to appear in China was only about 40,000 (about 5.6%) [1]. It is also noteworthy that the world’s leading academic journals (e.g., *Science*, *Nature*, and *PNAS*) have relatively long histories when it comes to publishing short papers, mainly Editorials, Opinions, News pieces, and Letters. We therefore took *Nature* as an example and listed the article types (or column headings) seen in its foundation year as well as in a recent issue (Table 1). This simple analysis shows that while several classic types have always been in use, some have been renamed over time in order to adapt to scientific developments of the last 150 years. It is noteworthy that the different kinds of short papers published in *Nature* have remained more-or-less stable over recent years (Table 1).

We make the following observations regarding recent issues of the three leading scientific journals: (1) Nearly half of all published articles in *Science* comprise short papers, about 30% of total pages; (2) More than 50% of articles in *Nature* comprise short papers, about 25% of pages; (3) Short papers comprise a much lower proportion in *PNAS* but this journal’s use of columns is really interesting. We therefore conclude that while these leading academic journals are interested in publishing different types of short papers, regular articles still do comprise a large majority of each issue in terms of pages.

Table 1 A comparison of article types published in *Nature* in 1869 and 2021

Article type in 1869 [2]	Article type in 2021 (Vol 600, Iss 7889, Dec. 16, 2021)
Editorial	<i>This Week</i>
Lead Article(s)	Editorial
Book Reviews	World View
Articles	Research Highlights
Letter	News in Focus
Notes	News Round-Up
Scientific Serials	News
Discipline Reports	Features
Correspondence	Books & Arts
Societies & Academies	Book Review
Miscellany	Opinion
Diary	Comment
Books Received	Correspondence
	Work
	Column
	Where I Work
	Research
	News & Views
	Reviews
	Perspective
	Articles
	Matters Arising
	Amendments & Corrections
	Nature Outline

The types of short papers (without abstract) seen in a 2021 issue are in red

Short papers have scientific significance

It is generally believed that in order to prepare a full-length paper, researchers will usually need to spend a relatively long time proposing motivations, reviewing literature, designing methods, carrying out experiments, analyzing statistics, and drawing conclusions. An acceptable, or solid, piece of research may eventually emerge after hundreds or thousands of failures. We should also acknowledge that sometimes a novel but rough idea is also promising, the timely publication of which might even change the world. This could then help researchers both in the same and related fields discover new things.

An earlier example, “On the Origin of Species,” is noteworthy as one of the most famous pieces of scientific work of all time. This work was written by Charles Robert Darwin, first published in November 1859 in London. Far fewer col-

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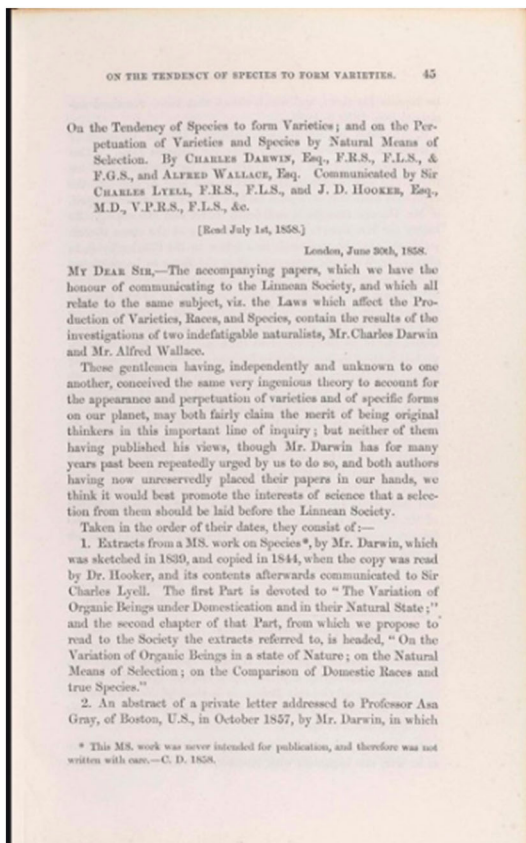


Fig. 1 The letter that first presented Darwin's theory of evolution by natural selection which was published in *The Proceedings of the Linnaean Society of London* in 1858. This was one year earlier than the publication of the famous "On the Origin of Species" in 1859

leagues, however, will be familiar with the fact that one year earlier, in 1858, a *Letter* "On the tendency of species to form varieties; and on the perpetuation of varieties and species by natural means of selection" was first published in *The Proceedings of the Linnaean Society of London*. This short article was actually the place where Darwin first presented his theory of evolution by natural selection (Fig. 1). This initial short article can therefore be regarded as the antecedent of Darwin's famous 1859 work. Additional recent examples, such as two editorials [3, 4], written by Dr. Thorp, the Editor-in-Chief of *Science*, have attracted a lot of attention and resonance. Indeed, a number of scientists commented that this piece [3] "is a timely editorial," which makes us realize "science is a human endeavor with all the frailty of human endeavor."

We therefore argue that existence of short papers (e.g., *Letters*) in the early days of academic endeavors may have

a specific historical background in Western publishing. It is also clear that continuity in the publication of such short papers up until the present day also serves to validate their special scientific value.

Our journal, *Bio-Design and Manufacturing (BDM)*, is striving to improve different types of short papers

The journal *BDM* has published short papers since its foundation. Indeed, keeping in mind the great disparity between China and the United States in terms of these articles and considering the particular contribution of short papers, *BDM* encourages novel ideas, methodologies, and techniques for rapid publication as short papers. This enables *BDM* to broadcast valuable knowledge to the world. We are therefore also trying to enrich the range of these article types; indeed, as stated in SpringerLink (<https://www.springer.com/journal/42242>), *BDM* currently accepts short papers including *Editorials, News & Views, Perspectives, Letters, Products & Materials, Technical Notes, Case Reports, Lab Reports*, etc. Building on the instructions for authors as presented in *Science, Nature*, and *PNAS* [5–7], we also wish to define each kind of short article for *BDM* and therefore make our content more accessible and useful for authors, reviewers, and readers. We therefore provide clear definitions and page limits, as well as examples of each kind of short paper (Table 2). These types of short papers are all published in *BDM* without abstracts, and we also ask that the extent of author lists as well as the number of corresponding affiliations should be limited.

All the short papers that we publish in *BDM* are subjected to rigorous review under either editorial team or via peer-reviewers, guaranteeing their scientific robustness. As short papers may include preliminary conclusions, or sometimes just "speculations," the current peer-review process might "stifle innovation." One relatively new idea across our industry considers a "divide between speculation and 'actual science' just on the basis of approval by a small group of anonymous referees" [20]. Thus, due to the unique contribution of short papers, we believe that combining this idea in the peer-review process will lead to a clearer understanding for both authors and reviewers.

As science and technology develops, we believe that bio-design and manufacturing has a promising future. We are therefore always updating our journal's article types, keeping pace with trends in related fields.

Table 2 Definition of short paper types for *BDM*

Article type	Definition	Page limit	Example
Editorials	An <i>editorial</i> is usually solicited. This article type might be written by invited experts from a specific field summarizing a special issue, or it might be written by editors to report brief but important materials which we wish to share with readers. An editorial should be a prospective view that is also timely or with a clear humanistic edge.	~ 2–3 pages	[3, 4, 8]
Perspectives	A <i>perspective</i> “should identify a critical science problem, provide a state-of-the-art assessment, and offer new insights or a new approach to its resolution” [5], usually from a personal view point.	~ 3–6 pages	[9, 10]
Letters	A <i>letter</i> is “a short report of original research focused on an outstanding finding whose importance means that it will be of interest to scientists in other fields” [6].	~ 2–3 pages	[11]
Technical Notes	A <i>technical note</i> usually “gives a brief description of a specific development, technique or procedure, or presents a software tool or an experimental or computational method” [12] with great novelty and (potential) practical value.	~ 3–5 pages	[13]
News & Views	This kind of article “informs non-specialist readers about new scientific advances” [7] that have recently been published in <i>BDM</i> or another journal with similar scope.	~ 2–3 pages	[14, 15]
Products & Materials	This kind of article introduces advanced materials and products that would significantly influence the development trend in related fields, briefly showing the ingredients, operation, and the corresponding novelty (a key picture is required).	~ 1–2 pages	[16]
Case Reports	A <i>case report</i> usually “describes patient cases which are of particular interest due to their novelty and their potential message for clinical practice” [17]. In the case of such papers submitted to this journal, engineering (mainly bio-design and manufacturing) techniques should be applied. Much attention should be paid to the comprehensiveness of clinical information, completeness of course of illness, and accuracy of diagnosis. Due to its specific characteristics, Informed Consent Form is required in addition to the privacy protection of patients.	~ 3–5 pages	
Lab Reports	A <i>lab report</i> introduces famous labs related to <i>BDM</i> ’s scope in both domestic and overseas, illustrates research directions to readers, and highlights advanced equipment and key research groups.	~ 2–3 pages	[18]
Negative Results	A <i>negative result</i> shows an unexpected conclusion based on one’s anticipation; most importantly, it would warn peers “what does not work,” avoiding wasting time but trying another path [19].	~ 2–3 pages	

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