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Science Editing (Sci Ed) is the official journal of the Korean Council of Science Editors (http://kcse.org) and Council of Asian Science Editors (http://asianeditor.org). It aims to improve the culture and health of human beings by promoting the quality of editing and publishing scientific, technical, and medical journals. Expected readers are editors, publishers, reviewers, and authors of the journals around the world; however, specially focused to those in Asia. Since scholarly journals in Asia are mostly published by the academic societies, universities, or non-profit organizations, Sci Ed is sought to play a role in journal development. The number of publications from Asia is increasing rapidly and overpass that of other continents, meanwhile, the number of international journals and highly appreciated journals is yet to be coming forward. It is task of Asian editors to pledge the journal quality and broaden the visibility and accessibility. Therefore, its scope includes the followings in the field of science, technology, and medicine.

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About the journal

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Editorial

1 Science Editing is indexed in the Scopus
Kihong Kim

Reviews

2 Journal Article Tag Suite subset and Schematron: achieving the right balance
Alexander B. Schwarzman
16 Overview of journal metrics
Kihong Kim, Yeonok Chung
21 Publication contracts and their legal interpretation in Korea
Seung Jong Oh
26 Open access full-text databases in Asian countries
Tae-Sul Seo

Original Articles

32 Language policy and the disengagement of the international academic elite
John Harbord
39 Authors’ perspectives on academic publishing: initial observations from a large-scale global survey
Basil D’Souza, Sneha Kulkarni, Clarinda Cerejo
44 Comparison of the patterns of duplicate articles between KoreaMed and PubMed journals published from 2004 to 2009 according to the categories of duplicate publications
Soo Young Kim, Chong Woo Bae, Hye-Min Cho, Sun Huh

Case Studies

49 Arbitral action and preventive methods against predatory journal practice
Sung Pil Park, Eric Yong Joong Lee, Ji Hee Suh
53 Citation performance of Indonesian scholarly journals indexed in Scopus from Scopus and Google Scholar
Lukman Lukman, Yan Rianto, Shidiq Al Hakim, Irene M Nadhiroh, Deden Sumirat Hidayat
59 Reviving a scientific journal: challenges and strategies
Jose Isagani Janairo
Essays

62 The international reach of Crossref
Vanessa Fairhurst

66 Sex and gender-related issues in biomedical science
Yong Sung Kim

70 Life as an editor: developing a domestic journal to an international journal
Dae-Myung Jue

Meeting Reports

73 How Asian publishers can compete with publishers in Europe and North America
Sun Huh

76 Eighth International Congress on Peer Review and Scientific Publication
Hyun Jung Yi

79 PKP 2017 International Scholarly Publishing Conference
Youngim Jung

82 Crossref LIVE17 annual meeting in Singapore
Jae Hwa Chang

85 DOAJ Ambassador Training Course in Seoul
Hea Lim Rhee

Science Cartoon

87 A party to celebrate having an article published
Beom Sun Chung, Min Suk Chung

Announcement

90 Events in 2018
Science Editing is indexed in the Scopus

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In the previous issue, I announced that Science Editing began to be indexed in the Emerging Sources Citation Index. In this issue, I am very happy to inform our readers that Science Editing is now being indexed in the Scopus. In the last year, the Content Selection & Advisory Board of the Scopus informed us that it advised to include Science Editing to the Scopus database. Specifically, it acknowledged the good quality of our contents and considered its potential for growth in submissions and citations highly. I think it is a wonderful achievement considering that the journal is only four years old. I am very grateful to the editorial board members and to the authors who contributed valuable articles to Science Editing. Being indexed in the international databases such as the Scopus and the Emerging Sources Citation Index is very important because it will lead to a substantial increase of submissions of high quality manuscripts. I hope our readers continue to support Science Editing and strongly encourage editors, publishers, authors and reviewers all over the world to contribute their valuable manuscripts to Science Editing, thereby participating in developing it as a world class journal in the field of editing and publishing.

Conflict of Interest

No potential conflict of interest relevant to this article was reported.
Journal Article Tag Suite subset and Schematron: achieving the right balance

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Abstract
Ensuring that published content adheres to the publisher’s business and style rules requires the implementation of quality-control solutions that encompass the entire enterprise, including vendors and in-house staff. The solutions must span the entire life cycle of the manuscript, from extensible markup language conversion to production to post-publication enhancements. Two techniques that may help in achieving this goal are developing Schematron and making a Journal Article Tag Suite subset. Both come with costs: Schematron change management requires development and maintenance of an extensive test-base; making a subset requires comprehensive content analysis and the knowledge of the publishing program’s direction. Achieving the right balance between the two techniques may reduce the costs associated with them.

Keywords
Journal Article Tag Suite subset; Journal publishing tag; Schematron; XML

Introduction

In this paper, we revisit the notion of “appropriate layer validation” at the current state of technology. We share the experience of running a successful large-scale quality-control operation that has been accomplished by using a combination of Journal Article Tag Suite (JATS) subset and Schematron. After demonstrating what Schematron change management entails, analyzing the advantages and costs associated with building Schematron and with creating a subset, and considering several validation scenarios, we conclude with the suggestion that the two techniques, when used in tandem, may complement one another and help control software development costs.

Schematron Change Management: An Introductory Example

Let us take a real example from a production Schematron. Consider the XML markup below:
We need to implement the following requirement: “The last segment of an image filename (i.e., of the value of the xlink:href attribute on the element graphic) must correspond to the sequence number of the parent figure. For example, for the fifth figure in the body, the numeric part of the last segment of the image filename, i.e., ‘-g005a’, must be 5. We will make an exception for correction article type, and we will only check this requirement at the final production stage.”

This is how we will implement the requirement:

```
<rule id="FIG148" context="graphic[parent::fig][not($module-code = 'TJI')]">
  <d:req>The last segment of the graphic name (i.e., of the value of its xlink:href attribute) must correspond to the sequence number of its parent figure within the article's body. E.g., for the fifth figure in the body, the numeric part of the last segment for its graphic '-g005a' must be 5.</d:req>
  <d:note>Only check, via context, the graphic elements whose parent is fig.</d:note>
  <d:func>We get the sequence number of the preceding fig element.</d:func>
  <let name="fig-sequence" value="count(preceding::fig) + 1"/>
  <d:func>We obtain a numeric part of the last segment for the graphic name.</d:func>
  <let name="graphic-number" value="number(replace(tokenize(@xlink:href, ['-'])[last()], ['^0-9'], ','))"/>
  <d:note>Exception made for Corrections.</d:note>
  <assert
test="$graphic-number = $fig-sequence or /article/@article-type = 'correction'"
expecting '<value-of select="tokenize(@xlink:href, '-')[last()]'"'/>' in graphic
name 'value-of select="@xlink:href' /> to contain number 'value-of
select="$fig-sequence'/>'</assert>
</rule>
```

How can we make sure that this rule works as it is supposed to? We need to write two kinds of tests: ‘Go’ tests, which contain markup that should pass; and ‘NoGo’ tests, which contain markup that should trigger the error message specified in the assert statement. In this case, we have several Go tests, including: an article that contains one figure with a correctly named graphic; an article that contains multiple figures, each with correctly named graphics; a correction article that contains a figure whose graphic name does not have to follow the rule; an example in which a graphic is a child of a biography or of a boxed text rather than of a figure; and an article in which image filenames do not conform to the rule, but the rule doesn't fire because the article is checked at the initial (as opposed to the final) production stage. We also have several NoGo tests, including: multiple examples, each with differently misnamed graphics (you may have seen such examples in the XML supplied by your conversion vendors), to make sure our regular expression catches the most frequently occurring variations of incorrect image names; and articles of types other than correction, i.e., review or introduction, with misnamed graphics.

Obviously, developing and maintaining such tests requires time and effort. But can we assume that once we have developed
and run the tests, and made sure our rule works as expected, we can forget about the tests? To answer this question, let us consider a couple of examples of what happens when Schematron code changes. First, in Schematron, each rule sets a context in which it operates. If two rules have the same context and a test in the first rule fires, then the tests in the second rule will not operate. Now, suppose your Schematron has dozens of rules, and in the course of development you accidentally added another rule with the same context. You will not discover the problem unless you run all your NoGo tests and see that some of them no longer generate an expected error. Second, the Schematron snippet above is self-documented: it contains an English-language description of requirements, exceptions, and functionalities. But this is not always the case. Suppose the Schematron code is not self-documented, and someone doing code review and cleanup decides that the predicate [parent::fig] in the rule’s context is not necessary and removes it. You will not discover that this is a problem unless you run all your Go tests, including the one in which a graphic element is a child of a non-figure element, such as a biography bio. Then you will see that the test that used to pass now fails and throws an error, even though it should not.

What these examples make clear is that every time you make a change to the Schematron, you have to run all your tests to ensure that all Go tests pass and all NoGo tests generate the errors they are supposed to. If a Go test fails or if a NoGo test does not throw the expected error then you need to investigate the problem in your Schematron code and correct it.

---

**Fig. 1.** Schematron: modular architecture.

**Fig. 2.** Individual module structure.
Schematron Change Management: Large-scale Schematron

Modular Schematron architecture and configuration
Let us now consider a reduced example of a large-scale production Schematron that consists of four top-level Schematron instances and a modular library of 25 files. Each top-level Schematron instance is designed to check a certain kind of document, e.g., Express journal (EJ) or Traditional journal (TJ) article, at either the initial (I) or the final (F) stage of production. Modules in the library reflect an article structure (metadata, references), article components (figures, tables), areas of special concern (funding, MathML), journal type (Traditional, Express) or some other organizing principle. A top-level Schematron instance invokes only those library modules that are appropriate to validate the respective kind of document. Fig. 1 shows a grid illustrating a modular Schematron architecture. Each Schematron module in the library comprises a number of rules, where a rule defines a context and contains assert and (or) report statements testing certain conditions within the rule’s context. The library also includes a number of supporting XSLT modules with variable, function, and key declarations used in the Schematron modules.

Fig. 2 shows an example of one rule in the sup-mat.sch module, which contains the requirements dealing with validation of supplementary materials. The rule sets a context and contains an assert statement and a report statement that test certain conditions.

Schematron testbase: Go and NoGo tests
As demonstrated in the introductory example, to verify that assert and report statements work properly we need to develop...
Fig. 4. NoGo test.

Fig. 5. Go and NoGo tests.
op Go and NoGo tests for each statement. Go tests contain examples of valid markup or content; they should always pass, regardless of future changes. NoGo tests contain typical examples of invalid markup or content; regardless of future changes, they should always fail and generate expected error messages. To verify this, it is necessary to compare the validation report a NoGo test produces with the reference ("gold") standard; i.e., the report that contains expected error messages.

Go test failure or No Go test success indicates that your modifications had an unexpected effect and that you need to review and fix your Schematron code.

Fig. 3 shows a Go test for the sup-mat.sch module. If we invoke only this module and run it over the test we will get no errors. Fig. 4 shows a NoGo test for the requirement Duplicate sup. mat. DOIs are not allowed. The test contains two identical DOIs. Running the Schematron that invokes the sup-mat.sch module results in the expected error message “ERROR [spmt-test:SPMT130]: DOI ’10.1364/OPTICA.1.000001.s001’ is listed more than once”. Fig. 5 shows a small sample of Go and NoGo tests for a few Schematron modules.

In addition to Go tests for the individual assert and report statements, it is also useful to have full-text Go samples for the entire articles of various types, such as research article, correction, review or editorial; and at the various stages of production process; e.g., at the initial and final stages. These tests should pass when they are run against top-level Schematron instances. Fig. 6 shows a small sample of Go and NoGo tests.

Since it is not unusual for a large-scale Schematron to have thousands of assert and report statements, and because multiple Go and NoGo tests may be needed to check each statement, ideally the test base should include many thousands of Go and NoGo tests, as well as a script that runs them every time a change is introduced.

Schematron change management: summary
When Schematron is used as QA/QC tool, the Schematron change management requires the following steps: (1) create Go and NoGo tests for the individual assert and report statements, (2) create Go tests for full-text articles of various types, (3) debug Schematron code when Go tests fail and NoGo tests pass, and (4) develop and test a script to run the entire test-base every time Schematron code is modified.

Schematron Maintenance Costs
To ensure that published content adheres to the publisher’s business and style rules we try to choose technologies and devise solutions that provide quality control consistency across (1) the entire enterprise, including external (vendors) and internal (in-house) production processes and (2) the entire production cycle of a manuscript, from XML conversion to initial validation to final check to post-publication corrections/enhancements.

One of the advantages of Schematron as a technology is that it can serve as “glue” that binds together various production workflow segments. However, as we saw earlier, Schematron maintenance does come with costs. The question then becomes, how can we reduce them?
Let us recall our introductory example: “The last segment of an image filename (i.e., of the value of the xlink:href attribute on the element graphic) must correspond to the sequence number of the parent figure. For example, for the fifth figure in the body, the numeric part of the last segment of the image filename; i.e., '-g005a', must be 5. We will make an exception for correction article type, and we will only check this requirement at the final production stage.”

Clearly, these kinds of constraints cannot be implemented by means of grammar-based languages, such as DTD, XSD Schema or RelaxNG. Schematron seems a natural choice here.

Now let us consider another requirement: “Element *fig* must have the following content model.”

Recall that, in JATS, element *fig* has the following content model:

```xml
<!ELEMENT fig ((label, caption, (alternatives | array | code | graphic | media | preformat)+) >
<!ATTLIST fig
   id ID #REQUIRED
   xml:base CDATA #IMPLIED
   position (anchor | background | float | margin) 'float'
   orientation (portrait | landscape) 'portrait'
   specific-use CDATA #IMPLIED
   xml:lang NMTOKEN #IMPLIED
   fig-type (color-online | color-print | figure) #IMPLIED >
```

Here, the turquoise highlights indicate the elements that have been eliminated, and the yellow highlights indicate the items that have been changed. Let us now suppose that we implement this requirement in Schematron.

**Schematron code**

**Elements**

To ensure the correct sequence of child elements in the element fig, we will have to write a series of relatively complex assert/report statements involving the preceding-sibling:: and following-sibling:: XPath axes. As Eden and Cleghorn [1] notes, “although XPath is capable of expressing a sequencing constraint, attempting to use it in this way is inevitably verbose and problematic for maintenance. For example, consider a DTD element model (title, p+) – a Schematron rule with the context title might trivially and accurately (albeit without prohibiting other elements) test following-sibling::pin an assert; however, now consider (rb, (rt | (rp, rt, rp))+) and the rapid increase in complexity is plain.”

**Attributes**

Because in our modified content model we have the id attribute whose presence is now required, whereas in the DTD it is simply implied, we would have to write a Schematron rule to check for its presence. Here is an example from Eden and Cleghorn’s study [1] where “$required.attrib is a variable read from a static external document and containing a list of elements with attributes whose presence are required by CUP but which are merely permitted by the DTD.”
Schematron code complexity

In other words, as Eden and Cleghorn [1] indicate, this approach “leads to a need to treat the DTD as a coarse whitelist of elements which may be present, and Schematron as a finer blacklist of structures which are not desired.” Because different error messages may require different responses, we may have to use Schematron role structure to indicate the severity level of a problem: one can differentiate between such roles as “fatal,” “error,” “warning,” and “info.” Then it is left to a user or to a processing system to decide how to react to each of these.

It is obvious that the complexity in and of itself may result in the Schematron code being brittle and error-prone. Yet, as we have seen, simply writing Schematron code, no matter how sophisticated, is not sufficient to ensure quality; one also has to build and run a testbase to future-proof the Schematron when further development occurs. What does this entail?

NoGo tests for eliminated elements

We would need to make sure that the eliminated elements are not present in the element fig’s content. The eliminated elements are abstract, alt-text, attrib, chem-struct-wrap, def-list, disp-formula, disp-formula-group, disp-quote, email, ext-link, kwd-group, list, long-desc, object-id, p, permissions, speech, and statement. To do this, we would need to write one or more NoGo tests to make sure an error message is emitted if fig contains any of the eliminated elements.

NoGo tests to check element occurrences

Since the occurrence indicators for the elements label and caption have changed from “optional” to “required”, and the occurrence indicator for the class of elements (alternatives | array | code | graphic | media | preformat) have changed from “optional, repeatable” to “required, repeatable,” we would have to write NoGo tests to make sure the Schematron will throw an error when these elements are not present.

NoGo tests for required attributes

Since the value of attribute id has changed from IMPLIED to REQUIRED, we would need a NoGo test to ensure an error is emitted when the attribute is not present.

Accounting for the specified attribute values

The value model for attribute fig-type has changed from CDATA to (color-online | color-print | figure). Thus we would have to build a number of NoGo tests to ensure that specifying non-allowed values would result in an error. Last but not least, we would have to run all of the above-mentioned NoGo tests every time a Schematron is modified.

Subsetting

The main advantage

We could, however, implement the same requirement simply by overriding the default JATS parameterized content models.
Note that, in this case, not only would it be unnecessary to write any Schematron code whatsoever but, perhaps even more significantly, we would not have to build and run any NoGo tests. Instead, we would be guaranteed that only allowed elements (in the correct quantities and in the correct order), and only allowed attributes (with the correct attribute values) would be present in the XML to be checked by Schematron. The DTD-validating parser will ensure adherence to these content model rules when the XML instance is checked against the DTD subset prior to Schematron validation.

Although simplifying fig involves the modification of only one content model, in real life many models may need to be simplified (the examples of ref-list and article-meta elements in Lapeyre [2] are especially’s work compelling). Therefore, using Schematron to verify markup structures that could otherwise be checked by a validating parser against a DTD subset can result in substantial increases in software development costs.

Additional advantages
As Lapeyre [2] points out, subsetting offers many additional advantages.

Conversion to XML
For example, consider conversion from an author-submitted or legacy format to your production XML with the complete, out-of-the-box JATS and Schematron. Obviously, Schematron can be applied only after the conversion to the tag set takes place. Therefore, the software and people who perform the conversion will have a choice as to which elements and attributes to use. If they make a poor choice, the mistake will not be revealed until later when the Schematron is run. Creating a subset prevents the possibility of choosing the wrong elements and attributes in the first place, which is much more efficient than discovering a problem downstream the workflow, correcting it upstream, and then running the process all over again.
Fig. 7. Article type lookup authority (fragment).

Fig. 8. QuickFix in oXygen: validation.

Fig. 9. QuickFix in oXygen: action.
Human editing and XML editing tools customization

Even more obvious is the impact of not doing subsetting on XML-editing software and the people who use it. XML visual editing tools typically display context-sensitive lists of elements and attributes allowed in a given context. Since such tools are typically used after the document is converted to XML but before it is Schematron-checked, using Schematron to simplify some content models, eliminate certain elements and attributes, or give specific values to other attributes will be of absolutely no help to human editors because they will not see these alterations reflected in their tool. For human editors, these modifications need to be made via subsetting. Otherwise, as with XML conversion, the tagging mistakes will not be revealed until Schematron is run downstream in the workflow, when correcting them will take more time and cost more.

Subset as a communication device

XML tools—such as XSLT stylesheets for HTML display, XML-based composition systems, filters into and out of page makeup systems, applications that interface with relational databases and other types of XML repositories—typically need customization. How to convey to tool developers which markup structures, elements, attributes, attribute values, and occurrence indicators are allowed and which are not, so that they can perform the customization? You may have carefully written your Schematron to make sure only the allowed structures and values are present in your XML, but even if you documented the requirements within the Schematron code, it is not a trivial task to communicate those requirements to tool developers. If, on the other hand, you created a subset then the three override modules (class, mix, and model overrides) is all that the tool developer needs to perform customization. What this reveals is that a DTD subset can serve as a helpful and efficient method of communicating or teaching a tag set to anyone who needs to learn it, such as in-house staff, conversion and composition vendors, business partners, and aggregators.

The costs of subsetting

Of course, there are some costs to creating a subset. The main component here is analysis: the data architect must have a very good understanding of both the document structure and the direction in which the organization’s publishing program is going. Only then will she or he be able to determine which constraints should be imposed via subsetting and which are better to be checked via Schematron.

Another, lesser, expense is the cost of actually making and testing your subset using the JATS-recommended methods and mechanisms as described in the journal publishing tag library [3]. One has to also be mindful of the fact that the subset and each of its subsequent modifications will need to be shared with conversion vendors. This, however, is usually not a problem for a vendor; in fact, whether or not you, as a publisher, are aware of it, many vendors, to make their life easier, create a “production DTD” on their own, making the best guess of what your document model is. Wouldn’t it be more effective and accurate if, instead, you were the one who created the subset in the first place?

Schematron QuickFixes

One of the factors that may help you decide how to achieve the right balance between creating a subset and building Schematron is availability of QuickFixes technology. It emerged only a few years ago and overturned the old adage that Schematron could not “do” anything, in the sense that Schematron only checks the XML document and emits error messages, and then people or software have to fix the detected problems. QuickFixes operates within Schematron and allows the QC person to add, delete, or replace various nodes, as well as replace textual strings with nodes or other strings.

Here is a real-life example of adding a missing related-article element based on the article-type attribute.

We need to implement the following requirement: “Articles of certain types, determined by the article-type lookup authority, must have related-article metadata.” Fig. 7 shows a fragment of article-type lookup authority.

Fig. 8 shows an article of type “correction,” which is missing a related-article element and its required attributes. While running the Schematron validation the user is presented with the error message and a suggested QuickFix.

Clicking the QuickFix popup results in the insertion of the missing element with some attribute values computed and others to be filled manually (Fig. 9).

Fig. 10 shows the relevant QuickFixes code embedded into a Schematron rule. Thus if the quality of your XML document may benefit from user-applied predefined automatic repairs then Schematron with QuickFixes is definitely the way to go.

Schematron vs. Subset: Validation Scenarios

Implementing business and style rules calls for imposing constraints on JATS. Since constraints can be implemented via developing Schematron and via creating a subset, how can we decide on the best balance between the two?

Clearly, there are conditions that no Schema-based language can check in principle. As Schematron inventor Rick Jelliffe put it, Schematron is “a feather duster to reach the parts other schema languages cannot reach.” As Schwarzman et al. [4]
stated, Schematron can (1) validate or report on document structure, such as the presence or absence of elements (“Does my <abstract> contain a <disp-formula>?”). It can also look for the location of elements (“In which section is the table in my article?”); (2) validate or report on document content; i.e., there must be some content, or there must be some particular content and the content must follow some rule (“There must be a displayed equation in <abstract> and the label for this equation must always occur just after the math in the <disp-formula> element, not before; tell me when this rule has been disobeyed!”); (3) validate or report on the presence or absence of attributes, or on the content of attributes (“The attribute ‘specific-use’ must occur on <aff> within <contrib> and this attribute’s value must be ‘internal-use’”); and (4) check co-occurrence constraints: if X is true, then Y should be true; or, A, B, C, and W must all be present (somewhere).

Therefore, when a condition cannot be checked via a DTD, it is obvious that it should be checked using another technology, usually Schematron.

There are, however, many types of constraints that can be checked either via Schematron or via a subset, and which path to choose may depend on the nature of the workflows, tools, and markup structures, as well as on the available staff expertise and the resources available for software development.

Below we consider several scenarios where validation can be performed either via developing Schematron or via making a subset.

**Fig. 10. QuickFix markup.**

Validating content at various stages of production process
As an XML document goes through various stages of the production process, it may need different validation rules applied at each stage. For example, at the initial stage, a journal article may not have such metadata as an issue number, pagination, or a DOI. At the final stage, these metadata elements must be present and correct, but since copyediting has already been done, reference-checking rules might need to be relaxed. After the document leaves the vendor, some metadata may need
to be applied in-house, which would necessitate additional validation. When the published article is retrieved from the XML repository, e.g., for metadata correction or semantic enrichment, the XML may need to go through another validation before the article is loaded back into the repository. While it is possible to build a different subset for each production stage, and some publishers have done just that, it would probably be more practical to build a top-level Schematron instance for each production stage, with all top-level Schematron instances sharing a common modular library.

Validating different content segments
If your portfolio contains several types of journals with slightly different business and style rules, then similarly, it would probably be more practical to build top-level Schematron instances for each journal type rather than create a different subset for each.

Retrospective conversion
Suppose you would like to convert a few decades’ worth of journal content to JATS-conforming XML. Since the business and style rules have changed through the years, unless you perform an extensive and exceedingly expensive document analysis, you cannot predict with 100% accuracy which structures you may encounter in the legacy content. Thus if you choose to go the subset route you may find yourself in a situation where some unexpected content variations in the back issues cannot be tagged. In this case, using full JATS with Schematron that could be changed in an agile manner as described in Dineen et al. [5], might be the best option.

Validating different genres
For a publisher that uses JATS to publish journal articles and BITS to publish edited books (which contain chapters that resemble journal articles), a modular Schematron offers an opportunity to check both genres, since BITS includes JATS modules. Fig. 11 shows a reduced example of a large production Schematron that contains five top-level Schematrons for a book (BK), a book article (BA), and a journal article (JA) at the initial (I) and final (F) validation stages.

Since book article and journal article share the content models for body and back matter, the same modular library can be used to validate both. Because metadata models for these two document types are different, dedicated modules are employed to validate those.

Here again, the Schematron-based solution is probably preferable to making genre-specific subsets.

Quasi-static and quasi-dynamic changes
As observed earlier, the data architect must have a very good understanding of both the document structure and the direction of the organization’s publishing program. If we know that certain markup structures, elements, and attributes are not likely to be used in the near future, or ever, then it may make sense to cut down the tag set by tightening content models, thereby simplifying human editing, tool customization, and downstream processing, to mention just a few benefits of subsetting.

A potentially useful conceptual framework is to think of the subset as being quasi-static, and of the Schematron as being quasi-dynamic: that is, while the subset (usually in the form of a DTD) should be revised infrequently, e.g., once a year; the Schematron code could be revised as needed, e.g., monthly on average.

This approach may help with deciding on the right balance between the two techniques. In an extreme case, in which your document structure and editorial style are very stable and you do not anticipate a lot of business and style rule changes in the near future, then your needs may well be met by a subset.

Conclusion
Implementing efficient XML quality control across the entire enterprise and covering the entire production cycle requires an imposition of constraints on JATS in order to comply with business and style rules. This can be achieved via a combination of creating a subset and building Schematron.

Naturally, constraints that cannot be enforced via subsetting should be implemented via Schematron. As for the constraints that could be implemented via either mechanism, in deciding which technique to use, one may want to consider (1) whether content needs to be validated at different points of the workflow; (2) whether content comprises various segments, includ-
JATS subset and Schematron: achieving the right balance

ing converted legacy material; (3) whether content comprises different genres; (4) which markup structures are likely to change frequently (quasi-dynamic), which are likely to be stable (quasi-static), and which are likely not to be used at all; (5) whether XML quality is expected to benefit from applying QuickFixes; and (6) what budget, human resources, and expertise are available for developing and maintaining Schematron, Go and NoGo tests, and scripts for running them.

In practice, most publishers need to check the XML at multiple points in the production process, have different content segments, publish documents of different genres, perform retrospective conversion, and want to automate manual QC processes by having vendors or staff use QuickFixes. By using Schematron where appropriate and a subset where practical the publisher may realize savings on software development and maintenance while ensuring XML quality.

Both technologies have costs associated with them: (1) building Schematron requires knowledge of that technology, as well as developing an extensive base of Go and NoGo tests along with the testing protocol, and running the testbase prior to each Schematron release; and (2) making a subset requires knowledge of the publishing program’s direction, a thorough understanding of the current and future production processes, rigorous document analysis, and the expertise in creating a subset in accordance with best practices.

In 2015, we moved from using Schematron with “out-of-the-box” JATS to using Schematron with a JATS subset. As a result, we reduced the number of requirements checked by Schematron at that time from 568 to 494, and the number of assert/report statements in it from 845 to 737. Not only did we significantly simplify the Schematron code but, perhaps more importantly, we also decreased the number of required Go and NoGo tests, making Schematron change management easier.

While there is no “one-size-fits-all” approach, knowing your publication program, production process, and tools, as well as being cognizant of the budget and human resources available for software development and maintenance will help you achieve the right balance between using a subset and Schematron.

**Conflict of Interest**

No potential conflict of interest relevant to this article was reported.

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**Sources**


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Overview of journal metrics

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Abstract

Various kinds of metrics used for the quantitative evaluation of scholarly journals are reviewed. The impact factor and related metrics including the immediacy index and the aggregate impact factor, which are provided by the Journal Citation Reports, are explained in detail. The Eigenfactor score and the article influence score are also reviewed. In addition, journal metrics such as CiteScore, Source Normalized Impact per Paper, SCImago Journal Rank, h-index, and g-index are discussed. Limitations and problems that these metrics have are pointed out. We should be cautious to rely on those quantitative measures too much when we evaluate journals or researchers.

Keywords

Eigenfactor score; h-index; Impact factor; Journal metrics; SCImago Journal Rank; Source Normalized Impact per Paper

Introduction

There exist a variety of metrics that are used to indicate the level and the influence of scholarly journals. Most of these metrics are obtained by analyzing the citation data of journal articles. Among them, the impact factor is the best-known and most influential index. This index is calculated by a very simple and easy method, but it also has several problems. A number of other metrics have been proposed for the purpose of correcting these problems and providing more reliable estimates. In the present review, we introduce the definitions of several journal metrics and the methods to calculate them and explain their characteristics and defects briefly.

Impact Factor and Related Metrics

The idea of impact factor was proposed by Eugene Garfield in 1955 [1]. The Science Citation Index (SCI) was created based on this idea in 1964 and a quantitative evaluation of scholarly journals was launched for the first time. This index is annually announced in the Journal Citation Reports (JCR), which is currently managed by Clarivate Analytics, and is widely used by academic communities. Many related indices are also announced in the JCR.
Impact factor, 5-year impact factor, immediacy index, and impact factor without self cites

In a given year, the impact factor of a certain journal is defined as the average value of citations per paper received by the items published in the journal in two previous years. More specifically, its definition is given by

Impact factor of the journal J in the year $X = A/B$, where $A$ is the number of total citations in the year $X$ received by all items published in the journal J in the years $(X-1)$ and $(X-2)$ and $B$ is the total number of all citable items published in the journal J in the years $(X-1)$ and $(X-2)$. Citable items include only papers and reviews and do not include errata, editorials and abstracts. In the counting of $A$, however, citations to all items published in J are included.

The 5-year impact factor in the year $X$ is similar to the ordinary (2-year) impact factor, except that it is calculated using the citation data during the 5 years from the year $(X-1)$ to the year $(X-5)$. This index is useful in the academic disciplines where the number of citations is small or it takes some time for published results to be accepted by many researchers. On the other hand, the immediacy index is calculated similarly to the impact factor using the total number of citations received in the year $X$ by all items published in the same year $X$. If this index is large, it means that the papers published in that journal are cited rather quickly.

The journal self-citation means the case where a paper published in the journal J is cited in the same journal. In the JCR, the impact factor without self cites, which is obtained after excluding journal self-citations, is also announced. If the difference between the impact factor and the impact factor without self cites is significantly large for a certain journal, sometimes that journal is excluded from the JCR list.

Cited half-life and citing half-life

The cited half-life is calculated using the number of citations received in the year $X$ by all items published in a certain journal in all years. For example, let us suppose that the journal J received 1,285 citations in 2017. In Table 1, we show the (hypothetical) number of citations and the cumulative percentage classified by the published year of cited items. We find that the cumulative percentage becomes 50% between 2009 and 2008. If we assume that papers were cited equally in every month and calculate the year when the cumulative percentage becomes 50% up to the first digit after the decimal point, then we find that the cited half-life is 9.1 years. This index measures for how long the published contents are cited. In a similar manner, one can calculate the citing half-life using the papers cited by the journal J.

Median impact factor and aggregate impact factor

There is a problem with the impact factor in that it shows rather large variations among academic disciplines. For that reason, the JCR classifies journals based on the subject category and provides several metrics representing each category. The median impact factor is that of the journal placed precisely in the middle when the journals in a certain category are arranged in the order of their impact factors. When the total number of journals in the category, $N$, is an odd number, it is the impact factor of the $1+(N-1)/2$-th journal. When $N$ is even, it is the average of the impact factors of the $(N/2)$-th and $[1+N/2]$-th journals.

The aggregate impact factor is obtained by dividing the total number of citations received by all items published in all journals in a certain category in the year $X$ by the total number of citable items published in all journals in that category in the years $(X-1)$ and $(X-2)$. Since the distribution of impact factors is not linear but highly skewed, the aggregate impact factor tends to be substantially larger than the median impact factor, as can be seen in Table 2. The aggregate immediacy index, the aggregate cited half-life, and the aggregate citing half-life are also provided in the JCR.

Problems of the impact factor and the editorial ethics

As we mentioned already, there is a problem with the impact factor in that it shows large variations among academic disciplines. In Table 2, we show the aggregate impact factor, the median impact factor, the aggregate cited half-life, and the average number of citations per paper for several subject categories listed in the JCR in 2011 and 2013. We notice a trend that the impact factors are usually larger in the disciplines where more papers are cited on average and the cited half-life is shorter.

The impact factor is obtained by the arithmetic mean of the number of citations received by the items published in a certain journal. However, it is well-known that the distribution of the number of citations in a given journal is highly skewed. There exists a tendency that the impact factor overes-

| Table 1. Number of citations received in 2017 and its cumulative percentage classified in terms of the published year of cited items |
|-----------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Citations in 2017           | 23   | 65   | 147  | 138  | 58   | 44   | 51   | 45   | 68   | 62   | 584  |
| Cumulative percentage       | 1.79 | 6.85 | 18.29| 29.03| 33.54| 36.97| 40.93| 44.44| 49.73| 54.55| 100  |
Eigenfactor Score and Article Influence Score

The Eigenfactor score and the journal influence score were developed by Bergstrom et al. [2] to overcome the defects of the impact factor and have been provided by the JCR since 2007. The concept of Eigenfactor is based on the theory of complex networks. For its calculation, one uses a method similar to the PageRank algorithm, which was proposed by Brin and Page [3] and has been used in the Google search engine. In order to calculate the Eigenfactor score, we first define a database consisting of N journals and construct an N × N matrix \( H \), the ij component of which is given by

\[
H_{ij} = \frac{Z_{ij}}{\sum_{k=1}^{N} Z_{kj}}
\]

where \( Z_{ij} \) represents the number of citations in the journal j in the year X received by the items published in the journal i during the five years from the year (X-5) to the year (X-1). Since journal self-citations are excluded in the calculation of the Eigenfactor score, all diagonal elements of the matrix \( Z \) are zero. Next we define a vector, \( \mathbf{a} \), called the article vector. The i-th component of this vector, \( a_i \), is obtained by dividing the total number of papers published in the journal i during the 5 years from the year (X-5) to the year (X-1) by the total number of papers published in the whole database during the same period. In the calculation of this kind of problem, one needs to take a special care of the dangling nodes and the dangling clusters. An example of the dangling node is the case where a certain journal j does not cite any of the journals in the database, but its papers are cited by other journals. Then the matrix elements \( Z_{ij} \) are zero for all k. Since the j-th column of the matrix \( H \) is undefined, it is necessary to replace this column by a suitable vector. We define a matrix \( H^* \), which is obtained by replacing all columns corresponding to the dangling nodes by the article vector \( \mathbf{a} \), and then introduce an N × N matrix \( P \) given by

\[
P = aH^* + (1 - \alpha) \begin{pmatrix} a_1 & \cdots & a_1 \\ \vdots & \ddots & \vdots \\ a_N & \cdots & a_N \end{pmatrix},
\]

where \( \alpha \) is an appropriate constant and is usually selected to be 0.85. The journal influence vector, \( \mathbf{v} \), is defined to be the eigenvector corresponding to the largest eigenvalue of the matrix \( P \). The i-th component of the vector \( \mathbf{v} \) has the meaning of the weighting factor representing the relative importance of the journal i in the group of journals in the database. Finally, the Eigenfactor score of the journal i, \( E_i \), is calculated using

\[
E_i = 100 \frac{\sum_{j=1}^{N} H_{ij}v_j}{\sum_{j=1}^{N} H_{ij}v_j}
\]

According to this definition, the sum of all Eigenfactor scores for all journals in the database is equal to 100. Since this quan-
Overview of journal metrics

The CiteScore, Source Normalized Impact per Paper, and SCImago Journal Rank

In this section, we review three journal metrics provided by the Scopus database, which are the CiteScore, the Source Normalized Impact per Paper (SNIP), and the SCImago Journal Rank (SJR).

CiteScore

The CiteScore is very similar to the impact factor. It is calculated using the Scopus data and is defined as the average value of citations per item received by the items published in the journal in three previous years, rather than in two previous years as in the case of the impact factor. Another difference from the impact factor is that both numerator and denominator include all document types.

SNIP

The SNIP was proposed by Moed [4] as a metric that adjusts for different citation patterns across different academic disciplines. This metric is provided in the Scopus and can be used instead of the impact factor. The SNIP is defined as

\[ \text{SNIP} = \text{RIP/RCDCP}, \]

where the acronyms RIP and RDCP stand for “raw impact per paper” and “relative database citation potential” respectively. The RIP is the number of citations in the year X received by the papers published in the three previous years, (X-1), (X-2), and (X-3) in a certain journal divided by the total number of papers. It is similar to the impact factor, except that the 3-year citation window is used and only citations of papers are included and those of errata and editorials are excluded. In order to define the RDCP, one needs to define the DCP, which means the database citation potential, first. Let us consider the references of the papers which cited in the year X the papers published in a certain journal in the three previous years, (X-1), (X-2), and (X-3). Among these references, we consider only the references published during the same 3-year period. The DCP is obtained by dividing the total number of those references by the number of citing papers. In this calculation, only citations of the journals belonging to the database are included and other journals are ignored. The RDCP is obtained by normalizing the DCP by the median DCP of the database.

SJR

The SJR is provided by the Scopus together with the SNIP [5]. It is calculated iteratively in the following manner. First, one introduces a vector \( S \), which is meant to represent the relative importance of the journals belonging to the database of \( N \) journals. \( S \) is the weighting factor of the journal \( i \). In the first stage of the iteration, the values of \( S \) are assigned arbitrarily. The final result does not depend on the choice of the initial values. In the next step, the updated values of \( S \) are calculated using the formula

\[
1 - d - e + ea_i + \sum_{j=1}^{N} H_{ij} S_j \left( \frac{1}{\sum_{k \in \text{dangling nodes}} S_k} \right) + da_i \sum_{k \in \text{dangling nodes}} S_k \rightarrow S_i,
\]

where the constants \( d \) and \( e \) are chosen to be \( d = 0.85 \) and \( e = 0.1 \) and the matrix \( H \) and the article vector \( a \) are defined similarly to the case of the Eigenfactor calculation, except that the 3-year citation window is used. Using the updated values of \( S \), new calculations are repeated until all values converge. Finally, the SJR of the journal \( i \) is calculated using

\[ \text{SJR} = \frac{S_i}{A_i}, \]

where \( A_i \) is the total number of papers published in the journal \( i \) during the 3-year period.

h-index, g-index, and i10-index

The h-index was proposed by Hirsch in 2005 [6] as a new metric for evaluating the ability of an individual researcher. This index is calculated using all citations received by the papers published by a specific researcher. If we arrange those papers in the order of citations received by them and if \( h \) papers are cited at least \( h \) times, then the maximum number of \( h \) is the h-index of that researcher. Since it is possible to assign an h-index to the group of papers published in a specific journal in a specific year, it can be used also as a journal metric.

Since the h-index is obtained by using the total number of
citations of each paper, it increases monotonically with time. It has a shortcoming that researchers with a small number of very influential papers have low indices. In order to correct this shortcoming, Leo Egghe proposed a modified index named g-index. This index is defined as the maximum value of g when g papers among a certain group of papers were cited at least g^2 times. The g-index is always larger than the h-index. In addition to the h-index, Google Scholar provides a metric named i10-index, which is the total number of papers authored by a certain researcher cited at least 10 times.

Conclusion

In this review, we have surveyed the definitions and the characteristics of various kinds of metrics used for the quantitative evaluation of scholarly journals. All of these metrics are obtained from the analysis of citation data. In addition to the metrics surveyed here, new kinds of metrics continue to be devised. More recently, interest in alternative metrics, or ‘altmetrics,’ which go beyond conventional citation analysis, has been growing rapidly. We emphasize, however, that no metric is perfect and all metrics have limits and problems. Therefore it is necessary not to rely on quantitative measures too much when we evaluate journals, papers, researchers, and institutions.

Conflict of Interest

No potential conflict of interest relevant to this article was reported.

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Publication contracts and their legal interpretation in Korea

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Abstract
This study intends to help editors and publishers understand what to be aware of when signing a publishing contract in Korea. The legal interpretation of publishing rights may vary depending on the type of contract. It is vital for publishers to understand the different characteristics of each type of contract: author-publisher agreements, establishment of publishing rights, transfer of the author’s economic rights, and lump-sum agreements. Lump-sum agreements are a unique practice common in Korea, in which intellectual copyright is transferred upon a one-time lump-sum payment. Decisions regarding the infringement of publication rights in a given case will be rendered in accordance with the specific aspects of the relevant type of publication rights, and the work in question must be reviewed to determine whether it shows substantial similarity or sameness in order to prepare for any potential issues. Meanwhile, in Korea, electronic publishing requires an additional agreement separate from the printing publication agreement, but regulations regarding electronic publishing shall be confirmed through international agreements after considering the specific statutes and practices of publication in each country, as legal statutes and their interpretation may vary widely. Editors and publishers of academic papers and books must be aware of the various types of publishing contracts in practice.

Keywords
Journal publishing; Legal interpretation; Precedents; Publication contracts; Publication rights

Introduction
Publishing is generally defined as the act of reproducing and distributing the original content of a work in documents or pictures by way of printing. The process of publication, therefore, by definition entails the rights to copy and distribute. Article 63 of the South Korean Copyright Act states that “a person who holds the right to reproduce or distribute a work may establish the right to publish such work for a person who intends to publish such work in documents or pictures by printing them or by other method similar thereto.”

From the perspective of contract law, a publishing contract is an agreement to grant the
publisher his/her rights and obligations regarding reproduction and distribution. The two most common types of publishing agreements in practice in Korea are the establishment of publication rights and the authorization of publication, although the unique practice of lump-sum payment is also frequently used.

These types of publishing agreements are widely implemented, and some contracts may combine different characteristics of each type of agreement. The details of each specific contract must be evaluated to understand the legal factors that it may include. Below, we will explore the legal implications of each type of publishing contract based on examples.

Types of Publishing Contracts

Authorization of publication
Authorization of publication has to do with the “authorization of use of works” stipulated in article 46 of the Copyright Act. This type of agreement can be either a non-exclusive agreement, in which the author simply authorizes the publisher to publish a given work, or an exclusive agreement, in which the authorized publisher shall be the only person who can publish the work and the author shall not authorize a third party to publish the same content. In a non-exclusive agreement, the publisher does not have the right to prevent a third party from publishing the same content or hold the copyright holder accountable for a breach of obligations if a third party publishes the same content. However, the exclusivity only applies between the author and the publisher, and the publisher does not have the right to ban a third party from publishing the same content. In other words, the publisher only has the right to request a third party to publish the same content or hold the copyright holder accountable in such a case, unlike in an exclusive agreement, where publisher may hold the copyright holder accountable for a breach of obligations if a third party publishes the same content. However, the exclusivity only applies between the author and the publisher, and the publisher does not have the right to ban a third party from publishing the same content. In other words, the publisher only has the right to request the author not to authorize an act of publication by a third party, but not the right to enforce such a ban, in case the third party’s act of publication is not authorized by the author. Meanwhile, if the author responds with inaction upon a request from the publisher to act on a third-party publication, the publisher may exercise the subrogation right of obligee according to article 404 of the Civil Law of Korea.

Establishment of publication rights
Establishment of publication rights is considered a semi-real rights contract between the author and publisher with the purpose of establishing publication rights. The “publication rights” defined in Section 7-2, Special Provisions Concerning Publication of the Copyright Act refer to the very rights obtained by this type of agreement. This agreement provides the publisher with both exclusive rights and the obligation to publish under article 58 of the Copyright Act. The publication rights acquired by Section 7 of the Copyright Act are specifically known as “established publication rights,” to avoid confusion with the rights granted from authorization of publication. “Established publication rights” are exclusive in that the rights holder may wield them to prohibit publication or to claim damages without consulting the author in case of infringement of reproduction and distribution rights for the work. The author’s right to prohibit is simultaneously acknowledged, so both the author and the publisher share the right to prohibit. Since the authorization of publication relates to the authorization of use of works, in this article, the discussion will be limited to “established publication rights.” “Publication rights” shall hereinafter refer to “established publication rights” unless otherwise specified.

Transfer of the author’s economic rights
The author’s economic rights may be transferred by assignment in whole or in part, according to article 45, paragraph 1 of the Copyright Law. Although the author’s economic rights include many different types of rights related to publishing, it is also possible to transfer only the reproduction and distribution rights that are minimally essential to publishing. This is considered partial transfer of the author’s economic rights in accordance with article 45, paragraph 1.

Lump-sum agreements
Legal interpretation of lump-sum agreements
Compensation for a published work is paid to the author in multiple steps in the form of royalties contingent on the number of editions printed and the number of copies sold. In contrast, in a lump-sum agreement, the publisher makes a one-time flat rate payment to the author regardless of the volume of sales of the work [1]. A publishing contract can be either a lump-sum payment contract or a royalty contract, according to the payment method that is chosen. A lump-sum payment is a one-time advance payment as compensation for writing the work, without considering how many copies are sold. On the contrary, royalties are calculated by agreeing on a certain percentage rate of the sales price of the work, then multiplying it by the actual number of copies issued or sold [2]. Lump-sum agreements refer to all cases where compensation for publication is made at once in the form of a manuscript fee rather than as a royalty.

This method of compensation has long been used in Korea, especially for the publication of translated works. It is also used in cases where a number of authors are involved, making it difficult to divide the shares, or in order to motivate authors when royalties are low [1]. If a contract is entered into under the condition of a lump-sum payment, controversy often emerges regarding which of the four types the contract falls
under or whether it can be seen as a transfer of the author's economic rights. The key is to interpret the intentions of both parties regarding the concrete terms of the agreement at the time of signing it, and determine the characteristics of the contract by considering a set of factors such as how much higher the lump-sum payment is than the royalties, whether the payment amount can be changed, and whether there are any contingency terms regarding the volume of circulation or additional editions.

**Precedents**

Precedents indicate that the key to distinguishing the establishment of publication rights from a transfer agreement of the author's economic rights is the amount of compensation paid for the manuscript or writing. The Seoul District Court decision 94KaHap on June 1, 1994 determined that "the agreement between the applicant and A was to provide compensation for the use of work in the form of lump-sum payment, not pertinent to sales volume, thus the agreement shall be considered a lump-sum agreement, equivalent to establishment of publication rights or exclusive publication rights unless there is any evidence that the amount of lump-sum payment exceeds the royalties by far."

**Content of Publication Rights**

The holder of reproduction and distribution rights may establish publication rights for the person who wishes to publish the work by way of print or other similar methods in the form of a document or picture, according to article 57, paragraph 1 of the Copyright Act. In other words, an agreement to establish publication rights is signed between the author and the publisher, and as a result the publisher acquires the publication rights. The holder of the publication rights may publish the original copy of the work that is the object of the publication rights, as prescribed by the act of establishment (article 57, paragraph 2, Copyright Act).

Articles regarding exclusive publication rights shall apply *mutatis mutandis* to other terms of the publication rights, including their duration; transfer, limitation, and registration of the rights; the publisher's obligations, such as the obligation to publish the same content as the original; the obligation to publish within 9 months; the obligation to continue publishing; the obligation to indicate the reproduction rights holder; the obligation to notify the author of a recurring edition; the rights upon death of the author, the right to notify the author of the extinction of publication rights, and the right to modification and revision, so the details should be analyzed in light of what we have learned from the right of exclusive publication. The following few points are notable: A publication right is defined as the right to publish the “original copy” of the work that is the object of the publication right. Therefore, an act of unauthorized publication that is in breach of the publication right shall be an act of publishing an original copy of the work that is the object of the publication right, which can be acknowledged as reproduction and distribution of a work that has 'substantial sameness' with the original. While 'substantial similarity' with the original is normally sufficient to constitute infringement of copyright, 'substantial sameness' is required in the case of publication right infringements. An unauthorized publication act that constitutes infringement of the publication right not only refers to cases of reproduction and distribution of the whole published work, but also to cases of the reproduction of a substantial part of the published work.

Supreme Court decision 2003Da47782 on September 9, 2005 is a case in point. The plaintiff had acquired the right to publish the Korean version of a Japanese comic book series entitled *Romance of the three kingdoms* and published them under the title *Strategic romance of the three kingdoms*. Then, he found out that the same comic series published by the defendant under the title *Super romance of the three kingdoms* had copied or slightly modified the specific wording and descriptions of the characters, background, and dialogue, in breach of the plaintiff’s publication rights. The Supreme Court decided that the act constituted infringement of publication rights since the third party published a work that had ‘sameness’ with all or substantial part of the original work without permission from the publication right holder, while a modified publication to the extent of damaging its sameness to the original would constitute infringement of the right to create derivative works, not the right to publication.

Another Supreme Court decision, 2001Do3115, on February 28, 2003, ruled that “although article 57, paragraph 2 of the Copyright Act stipulates that a person for whom the publication right is established pursuant to the Act may hold the right to publish the original copy of the work that is the object of the publication right as prescribed by the act of establishment, the ‘original copy’ here refers to publishing the original work without making modification through adaptation or translation and not only to publishing the original work as a whole. Therefore, the infringer has breached the publication rights of the publisher when substantial parts of the original work were replicated, though not as a whole.”

**Typographical Arrangement Rights**

The typographical arrangement must not be confused with the colophon. The colophon is a statement at the beginning or the end of a book, typically with the title, date of publication.
tion, place of publication, publisher name, edition, price, and authorship of the book.

In the process of publication, the person who holds the right to publication contributes to the process by putting in many efforts after receiving the manuscript, such as proof-reading, typography, binding, choice of font, and editing, all of which require substantial creativity, specialized skills, and know-how. Today, with the advent of computerized editing and designing, there is a greater need to protect such efforts made by the publisher. Against this backdrop, the United Kingdom protects typographical arrangements for 25 years from the first date of publication, while Taiwan protects 10 years of typographical arrangement rights and recognizes plate-making rights, and Germany acknowledges 10 years of rights for publishers who publish ancient manuscripts for academic purposes. Meanwhile, South Korea has yet to establish specific rules on this matter, which should be a subject for future legislation [2].

**Liabilities for Publishing Illegal Work**

The publisher’s liability often becomes an issue when the author’s work include content that infringes a third party’s copyright. There have been many cases where the original author sued both the person who plagiarized the work and the publisher who published it. In accordance to the principle of fault liability of the Civil Act of Korea, no legal ground exists to hold the publisher liable for such infringement, provided that he/she was neither aware of the plagiarism nor was negligent. However, if the publisher had any intention or negligence, he/she bears liabilities for damages, pursuant to article 125 of the Copyright Law. Meanwhile, the right to demand suspension of infringement according to article 123 of the Copyright Law, for example, does not require intention and/or negligence of the infringer as a precondition, meaning that the author or the copyright holder may demand that the publisher suspend infringement, regardless of his/her intention or negligence.

If the published work infringes a third party’s copyright and the infringement results in damages to the publisher (i.e., being unable to publish the work), the publisher may hold the author liable for the damages due to breach of contract or an illegal act [2].

**Electronic Publishing**

Electronic publishing refers to the act of publication in the form of a digitalized electronic document instead of traditional paper books. This type of publishing has triggered controversy over whether it shall be seen as act of publication defined under the Copyright Law.

Subparagraph 24 of article 2 of the Copyright Law defines the term ‘publication’ as meaning “reproduction and distribution of the works or phonograms to meet public demand.” Subparagraph 22 of the same article defines the term ‘reproduction’ as “the temporary or permanent fixation of works in a tangible medium or a remaking of works by means of printing, photographing, copying, sound or visual recording, or other means,” while distribution is defined by subparagraph 23 as “a transfer by assignment or lending of the original or its reproduction etc. to the public for free or at charge.” Based on these definitions, publication must always involve a tangible object. Given this, electronic publications that do not produce any kind of packaged objects such as CDs or DVDs and are circulated only in the form of digital files do not meet the definition of a publication under the Copyright Law [3]. Therefore, the establishment of publication rights for electronic publications pursuant to the Copyright Law is equivalent to creating legally undefined semi-real rights, which is not acceptable. In order to apply the same rules of established publication rights to electronic publications, exclusive publication rights that encompass reproduction, transmission, and distribution are needed.

Another potential issue is whether signing an agreement to establish publication rights automatically grants permission for electronic publication in addition to paper publication, even without a special clause. This is ultimately a matter of interpreting the intention of the parties at the moment of signing such an agreement, but fundamentally it would be reasonable to interpret that a separate contract or exclusive publication rights are required for electronic publication, unless otherwise mentioned in the contract [4]. This is a particularly significant point given that electronic publication consists of digitalized information that can be easily duplicated and/or transmitted *en masse*, thus having a greater potential influence on the rights of the author than conventional printing.

The last, but not least, point is whether the first sale doctrine can be applied to digital content. This doctrine was developed under the premise that publishing requires tangible objects, so it will be challenging to apply this concept to electronic books. However, abolishing the first sale doctrine for electronic publications may bring enormous confusion in existing practices and regulations established among copyright holders and users, given its vital role in restricting copyright abuse and ensuring the free distribution of information. The prevailing wisdom is that the first sale doctrine shall be made applicable to electronic books as well as other digital content in general [5].
Conclusion

The legal interpretation of publication agreements should involve careful attention to the type of the contract; that is, whether it is an authorization of publication, establishment of publication rights, transfer of copyright, or a lump-sum agreement. “Substantial sameness” is required to constitute an infringement of publication rights, whereas “substantial similarity” is sufficient to constitute a general copyright infringement. As for typographical arrangement rights, South Korea has yet to establish its own specific rules. Unless otherwise included in the print publication contract, a separate contract or establishment of exclusive publication rights shall be required for additional electronic publication of the same work. Understanding the various types, practices, and legal interpretations of publication contracts in Korea is fundamental for publishers of academic papers or books.

Conflict of Interest

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Abstract
Open access promotion methods are generally divided into the ‘gold road’ and the ‘green road.’ Asian countries most commonly focus on the gold road while others focus on the green road. According to data from the Directory of Open Access Journal and the Directory of Open Access Repositories, Indonesia has the largest number of open access journals in the world, while Japan has the third largest number of institutional repositories. In contrast, in Korea, the extensible markup language services of the original text of journal articles are more popular than other Asian countries. In this article, the current status of open access in Asian countries is investigated, and typical open access journal service platforms in Asian countries are reviewed.

Keywords
Asian countries; XML full text; Journal databases; Open access

Introduction
Open access of academic journals has been promoted in order to allow anyone, without financial, legal, or technical barriers, to access journal articles that could not otherwise be read due to expensive subscription fees [1]. However, another important reason why many countries in Asia are interested in open access journals is to increase the accessibility and visibility of their journals [2,3]. The Asian region is rapidly increasing in prominence on the world stage, both in terms of research activity as well as scientific production. In terms of research outputs, the Asian region is already prolific and is growing quickly [4]. In contrast, the share of journals published by Asian countries in international indexes such as Science Citation Index and Scopus is relatively low. Thus, open access is a good way for Asian countries to increase the visibility of their journals.

In this article, the current status of open access in Asian countries is investigated using data from the Directory of Open Access Journal (DOAJ, https://doaj.org) and the Directory of Open Access Repositories (OpenDOAR, http://www.opendoar.org), and typical open access journal service platforms in Asian countries, including full text articles, are reviewed.
Current Status of Open Access in Asian Countries

There are 2 representative open access sites, DOAJ and OpenDOAR. DOAJ provides country-specific statistics for open access journals, while OpenDOAR provides national and continental statistics for institutional repositories.

DOAJ was launched in 2003 at Lund University, Sweden. It is a community-curated list of open access journals and aims to be the starting point for all information searches for quality, peer reviewed open access material [5]. Over 10,000 open access journals from around the world are included in DOAJ.

OpenDOAR provides a quality-assured listing of open access repositories around the world. OpenDOAR staff harvest and assign metadata to allow categorisation and analysis to assist the wider use and exploitation of repositories. It is maintained by the Centre for Research Communications at the University of Nottingham, United Kingdom [6].

Fig. 1 shows the current status of the Asian journals registered with DOAJ. Indonesia, India, and China have many journals registered with DOAJ. Indonesia has the largest number of open access journals in the world. In Indonesia, which has the fourth largest population in the world, all undergraduate and graduate students are required to publish 1 or more journal articles before final examinations [4]. Therefore, many journals exist and the number of open access journals is also greater than that of other countries.

India and China are the next largest number of journals registered with the DOAJ, but they are relatively small compared to the country size, and it is rather remarkable that Korea is the fourth. The reason for this is that the evaluation of academic journals in Korea gives an advantage to open access. Therefore, Korean academic societies became interested in open access to get the better grades in the evaluation.

Fig. 2 shows the statistics from OpenDOAR, a directory of open access repositories. Asia accounts for 20.2% of such repositories, following Europe. Japan has the most repositories among Asian countries because the Japanese government has been investing in the construction of institutional repositories since 2006. In return for receiving funds through a public contest, universities are required to make practical suggestions based on their experience in operating the institutional repositories [3]. Various types of academic content have been deposited in the institutional repositories, including journal articles. Since 2012, National Institute of Informatics (NII) has provided universities Japanese Institutional Repositories Online (JAIRO) cloud service, which is a shared institutional repository using WEKO system, repository software developed by NII. As of September 2017, 811 institutional repositories are installed in Japan.

Open Access Journal Databases in Asian Countries

Overview

As with other regions, open access policies and practices are

Fig. 1. The top 10 Asian countries registered in the Directory of Open Access Journal.

Fig. 2. Open access repositories (A) by continent and (B) by country in the Directory of Open Access Repositories (OpenDOAR).
being adopted in Asia, although progress varies greatly across the different countries [7]. Many Asian countries do not only have a cohesive national open access strategy, but also lack funding to develop the infrastructure needed to support open access. As a result, open access activities are uncoordinated, which ultimately reduces their impact [4].

In this article, cases of countries that have relatively well-established open access journal sites were introduced for reference in other countries. The Asian countries that operate well-established national platforms of open access journals are Korea, China, and Japan. Therefore, this article introduces the major journal service platforms of these 3 countries.

Korea

Korea has been interested in open access since the early 2000s, but since 2009, research and business related to open access have begun. The Korea Institute of Science and Technology Information was the first institution to build open access infrastructure as a national center of scientific and technological information in Korea. The Korean Federation of Science and Technology (KOFST) have been supporting open access journals. In the private sector, the Korean Association of Medical Journal Editors has been built journal database in the field of biomedical sciences.

In 2007, Korean Association of Medical Journal Editors launched KoreaMed Synapse (Fig. 3), the first Korean open access journal platform including approximately 130 Korean biomedical journals with full text articles in the form of Journal Article Tag Suite (JATS) extensible markup language (XML) [8]. KoreaMed Synapse, a reference linking platform using Crossref’s DOI (digital object identifier), was developed to be compatible with PubMed Central.

In the field of science and technology, Korea Institute of Science and Technology Information has been building an open access journal platform known as KPubS (Fig. 4) since 2014. KPubS originally provided only XML full text journals [9], but in 2016 it has expanded to open access PDF journals. As of 2017, KPubS includes 115 journals.

KOFST provides advantages to open access journals in the evaluation of journal support. Therefore, Korean academic societies became interested in open access to receive support from KOFST. Since Korean journals were mostly free access, it was easy to change to open access by just adopting an open access license such as Creative Commons Licenses. KOFST also operates a PubMed Central-compatible journal site called ScienceCentral that includes about 140 journals (Fig. 5).

In summary, almost all Korean open access journal platforms contain journals published in English or Korean, the interfaces are English, and full texts are in the form of JATS XML.

China

In early 2000s, the Chinese Academy of Sciences, and the Natural Science Foundation of China signed the Berlin Declaration. In 2010, the 8th Berlin Open Access Conference—the first one held outside of Europe—was held in Beijing. Like this, Chinese scientific communities have been very active in the promotion of open access [10]. However, China has also an open access journal service known as China Open Access Journals, operated by Chinese Academy of Sciences. It includes over 600 Chinese journals in all disciplines. The inter-
face is Chinese and readers can get the full texts through the links provided (Fig. 6).

To overcome low global visibility of Chinese-language open access journals, it is suggested that the publishers participate in the worldwide network of scholarly publishing, and engage in more interaction with their counterparts outside China so that they can be a part of a global publishing community, keeping a sharp eye on new trends in journal publishing [11].

**Japan**
The situation of scholarly publishing in Japan is similar to those of Korea and China. Scholarly Publishing and Academic Resources Coalition (SPARC) Japan has been launched in 2003 by NII in order to promote open access journals it [12].

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*Fig. 5. ScienceCentral (https://e-sciencecentral.org), operated by the Korean Federation of Science and Technology.*

*Fig. 6. China Open Access Journals (http://www.oaj.cas.cn) operated by the Chinese Academy of Sciences [access on 2017 Dec 23].*
After that, open access policy was adopted by Japanese government in 2013. The Japan Science & Technology Agency operates J-STAGE, which includes over 2,000 science and technology journals published in Japan. J-STAGE currently has a Japanese-language interface (Fig. 7). Japan Science & Technology Agency has been using J-STAGE as open access journal platform [13], and a new English-language interface is opened recently.

**Conclusion**

In this article, the current status of open access in Asian countries was investigated with data from DOAJ and OpenDOAR and typical open access journal service platforms in Asian countries are introduced. Indonesia has the largest number of open access journals of any country in the world, while Japan has the third largest number of institutional repositories. Meanwhile, in Korea, XML services of full texts are more popular than other Asian countries.

Other Asian countries do not seem to establish open access infrastructure well. Therefore, it is necessary to develop the open access infrastructure through cooperation between the countries where open access infrastructure is relatively good and those that are not. For example, it would be desirable to work together through editors’ community such as the Council of Asian Science Editors or through councils like Asia Open Access.

**Conflict of Interest**

No potential conflict of interest relevant to this article was reported.

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Language policy and the disengagement of the international academic elite

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Abstract
This paper explores the phenomena of academic multiliteracy (the habit of writing academically in more than one language) and of L2 monoliteracy (that of only writing academically in a language that is not one’s own) and their impact on policy. Based on interviews and surveys conducted with 33 multiliterate and 15 L2 monoliterate scholars connected to one university in Central Europe between 2010 and 2014, I show how incentives to publish in English constructed by educational policies often push ambitious young researchers whose first language is not English away from engaging in academic and societal debates in their first language community. They may thus disengage from the national community, with negative consequences for the interaction between global and local that is essential for good governance. To overcome the difficulty young scholars encounter in writing in their native languages, they should be taught writing both in their native language and in English. Furthermore, university and state policies should reward scholars for writing not only for the international community but also for local society.

Keywords
Language; Motivation; Publishing; Research personnel; Reward

Introduction
Not so very long ago, Huntington [1] summarily dismissed the argument that English is “the world’s language.” A language that is foreign to 92% of the world’s population, he pointed out, cannot in the most basic sense be the world’s language. The extensive research published—in English—on the role of English as the global language of academe occasionally overlooks this fact. In the field of governance, Huntington notes, there exists an English-speaking elite of key actors from almost every country in the world that shares cultural values related to “individualism, market economies, and political democracy,” which he names The Davos Culture. The globally mobile non-Western members of this elite co-exist or, better, “super-exist” with the people of their own countries, who live on a day-to-day basis according to often quite different canons of values. While this tiny minority wields enormous power, it is in no way representa-
tive of the vast majority of the world’s population, either culturally, or linguistically.

Similar concerns about the isolation and unrepresentativeness of an English-speaking international academic elite drive this article. Scholarship has addressed the difficulties of publishing in English as a second language [2,3], the skewing of power relations in favor of English native speakers in the Anglophone center [4], and measures that might affect them [5]. Simultaneously, another strand of discourse has addressed the concern that scholars do not engage sufficiently with the world beyond academy [6,7]. And in a world where the vast majority of the population still either cannot effectively or do not normally operate in English, publications in English have limited impact [6]. Despite the importance of supranational bodies such as the European Union, many key policy debates continue to be resolved at national level, and in national languages [8].

Seeking to strengthen institutional research profiles, universities and higher education ministries are increasingly introducing policies that encourage or pressure scholars to publish in English [3,9-12]. While these may or may not have positive effects on academic publishing choices within national systems [10], their impact on the interaction between academe and society has yet to be seriously studied.

The purpose of the present study was to investigate the multilingual publishing activities of a group of scholars in the social sciences and humanities connected to a US-accredited international university and to examine how the interaction of their career paths and external factors influences what they publish and with what consequences. Specifically, I show how they perform two distinct types of writing behavior: many write in English for an elite international academic community to share new cutting-edge knowledge and in their first language. I refer to the publishing behavior of those who write exclusively in English as L2 monoliterate. I also choose the latter term based on participants’ statements of their perceived inability or refusal to write in their first language. This “inability” will form a key focus of discussion below.

The first set of data is from semi-structured interviews (Appendix 1) I conducted with 15 research faculty (8 men and 7 women aged between their mid-thirties and late fifties) and 18 PhD students (8 men and 10 women in their late twenties and thirties) from 12 disciplines in the humanities and social sciences, with 13 different first languages, none of them English (group A). Of the total participants, 12, including most faculty members, publish in two or more languages; 21, including most PhD students, publish only in English. Three participants were native speakers of super-central [8] languages (German, Turkish, and Russian); others spoke Czech, Croatian, Dutch, Hungarian, Italian, Lithuanian, Norwegian, Polish, Romanian, Serbian, and Slovak. Further data was gathered via questionnaires (Appendix 2) completed in English by 15 alumni of the university under the age of 40 (slightly more women than men), whose first languages include Albanian, Bangla, Bosnian, Czech, Hungarian, Lithuanian, Romanian, Slovak, and Turkish, and who according to their LinkedIn profile are active in research positions (group B). Most publish in English and another language. Groups A and B both contain multiliterate and L2 monoliterate scholars. They are distinguished as A and B because data was gathered during two separate periods using different methods and slightly different sets of questions, as described above. All extracts are presented using conventional written punctuation.

The university under study has for some 14 years had an institutional policy that requires faculty to publish two articles per year in international peer-reviewed journals in English. In one or two disciplines (history and allied fields), publications in German and French may also be accepted. Publications in other national languages are not. It is important to note here that this policy directly affects only the faculty in group A. Those in group B are most influenced by policies in the country or institution where they work, while the PhD students in group A are likely influenced by anticipated policies in contexts where they plan to work, and they may see the policies of the university where they are presently studying as a typical example [13].

Methods

In the present study, I gathered data from two groups of researchers who have either studied or work at a private, international US-accredited English-medium university in Central Europe, with students and faculty from many countries. All informants are fluent in English (International English Language Testing System estimated 8.0 or above) but do not identify it as their first language. All publish in English, but not all in their first language. I refer to the publishing behavior of those who write in English and any other language (s) as multiliterate, and of those who write exclusively in English as a second (or other) language as L2 monoliterate. I also choose the latter term based on participants’ statements of their perceived inability or refusal to write in their first language. This “inability” will form a key focus of discussion below.
Results

Responses of both groups revealed motivations in line with the existing literature. For them, a key issue is the need to reach a specialized audience who understand their research area. Less influential languages were frequently perceived not to offer an audience worth addressing.

I publish in English to reach a larger audience. Creating a critical mass is only possible at global level. There are too few journals in my mother tongue, much smaller audience. (A1)
You write for a large, highly specialized audience in English. In other languages you can only get an audience that large if you are less specialized, so writing in those languages is less specialized. (A2)

Among group B, similarly, six considered their research area to be of little interest to researchers in their home country; a further (slightly overlapping) six believed that all those from their home country they hoped would read their work would understand English. These scholars are not writing academically for a local audience because in their eyes that audience is often small and speaks English anyway.

Career gains from publishing in English were also a prominent theme. In group B, over two thirds (11) saw no professional benefit from publishing academically in one's own language, although six had on occasion done so. One added:

… publishing in English is not only more convenient for me as a graduate from American (English-speaking) university, but also much more practical and beneficial for my further career as an international researcher. (B5)

Among members of Group A, opinions were similar.

Prestige and rewards of writing in English are much greater. (A3)
I write everything serious in English. I write for pleasure in French. (A1, Hungarian speaker)

Career benefits and the (un)availability of a specialized audience thus tend to mitigate against the motivation to publish in local languages. Indeed, for this group of informants (both groups A and B), whose mastery of English is extremely good and who see themselves as part of an international (English-speaking) academic community, publishing in English would seem like a natural choice, while publishing in their first language would likely bring fewer or no career returns.

The one economics journal in Slovak is ranked 185th in the world. I try not to publish there (A2).

Thus for an established academic, where academic publishing in national languages means publishing in low-ranked journals, it may actually be detrimental to one's career to do so.

Career mobility and disengagement

Other factors further discourage local-language publishing, particularly among younger researchers. The tendency among the young scholars in this study to publish mostly or exclusively in English may be due to their context of a high-ranking, highly international research-intensive university. The PhD students and alumni are mostly not working in their country of origin, and many were also not tied to the country where they were when the research was carried out. For them, Poland, Turkey or Russia may offer less promising career prospects and a lower standard of living than, for example, the United States or the western states of the European Union. Of those in group B, many were not in their country of origin, several being employed in English-speaking countries; several said they do not seek a link with their 'home community' either because they are 'not interested' or have simply lost contact.

I started [working in a research position] in Switzerland, then moved to Germany, now I am in Denmark. I no longer have much scholarly connection to Romania. (B1)
I am rather poorly connected with the Slovak academic environment. I do not find it inspiring, but I also lack good local academic networks due to my studies abroad. (B2)

The career path of these students, as the first example above clearly shows, predisposes them to become part of a relatively mobile international research community. While one PhD student (A13) did consider herself living in a "little English world" cut off from her first language community, more typically, national communities themselves were described as closed off from "where it's at" academically (A7), due to their choice of language, and identified as "older" (A7, A8). This is in contrast to findings by Anderson [13] that western European academics see publication in multiple super-central European languages as a ticket to career mobility, and more akin to Duszak's account of "English [as] a key to a 'better' world" in pre-1989 Poland [14].

The second consequence of mobility is the construction of a global academic elite as a monolingual transnational community held together by a language which is frequently not that of its members, but which, for reasons discussed below, becomes the only language they feel academically comfort-
Language policy and the disengagement of the international academic elite

able in. While the difficulties of publishing in English have been much discussed, less attention has been paid to how much easier it can be to write in English than in most other languages, ceteris paribus. Many of the younger scholars mentioned feeling uncomfortable or awkward writing in their first language, particularly as regards terminology for which local equivalents either do not exist or are not known.

Writing in Czech would be substantially more time consuming and demanding. (A3)
I use English to write scholarly papers because the technical jargon does not exist in Slovak. It is simply easier to use English. When I use a certain English term, everybody knows what I am talking about. (B1)
In my native language it takes more time to find the suitable terms. (A14)

Several identified more demanding expectations in other language communities than in English: that they have higher stylistic expectations than English audiences. Non-English audiences, they claim, are linguistically much more unforgiving, and in many languages, stylistic complexity and tour de force is welcomed because it is assumed that all users of that language will be highly proficient, and that performing such rhetorical feats is a part of national culture [15]. This linguistic expertise usually takes effort to acquire, however. One senior scholar commented that she chose not to publish in Hungarian journals in spite of her fluent command of the language.

They really expect you to produce a very complex, ornate style, and they criticize you if you don’t do it. It is the same actually in German but there it’s not a problem for me as I’ve been doing it my whole academic career. (A9)

The fact that simplicity is perceived as more desirable in English thus meshes well with many writers’ perception of their own linguistic abilities. In contrast, for those who have little practice and limited motivation, writing in the complex style they perceive as necessary in their first language represents an obstacle. Several found writing in English liberating, or else as constraining one to keep to the point.

Writing in Hungarian is a more painstaking process for me… I feel like I write more freely in English. (B7)
It is easy for me to write a long paragraph that says nothing in Slovak. My English is not good enough to do that. (A2)

It is also not surprising, given that English is one of the few languages in which students from most European countries are explicitly taught to write at all beyond high-school composition [15]. Almost all the younger scholars I interviewed had received writing courses, and many commented that this had strengthened their confidence in writing in English. Very few had received guidance in how to write in their first language.

Since, the first time I learned how to conduct research, and how to structure a paper, and write it down, I learned it in English. Therefore, in my professional career I find it much easier to write and communicate in English rather than Albanian. (B3)
Yes, I find expressing myself in English easier. This might be related to the fact that my MA and PhD education was in English and I learned to structure texts and arguments in this language and not in my mother tongue. (B2)

This finding is in line with Anderson’s [13] findings that the language of the PhD thesis is a key indicator for subsequent publishing choices.

Why does first language writing matter?
Several among my informants, especially the more senior, do write in their first language, in spite of the negligible career returns. However, scholarly articles are not their typical products; indeed many do not write such articles in their first language at all. A number mentioned that writing in their first language is sometimes not a deliberate choice but a response to an invitation or a request. These include policy-related documents—the older scholars typically acting as government advisors (A1, A7, A10, A11, A12), whereas the younger ones more often do so for non-governmental organizations (NGOs) (A8, B2)—giving conference plenaries, or writing texts for a broad intellectual non-specialist audience reachable through high quality daily newspapers, intellectual magazines on socio-political themes, and so on.

I write for less scholarly audiences in Serbian, e.g. teachers. (A11)
When I write in English I am writing at the top of the market. I write in German at various levels. (A9)

Several faculty members in the first group also write textbooks for university students. Three members of the second group had published educational materials in their first language, none in English, an educational role which, while it may not create new knowledge, is undoubtedly of intrinsic value. In general, like scholars mentioned by Duszak and Lewkowicz [15] and Lillis and Curry [4], both groups interviewed in this study do engage or wish to engage with the
wider community—often with social goals:

When I write in Turkish I write for academics and NGO activists, therefore I feel free to combine academic discourse with everyday language. If it is not for an NGO I write in English. (A8)

I write my academic articles in English to reach international academia and public and I write Bangla articles and popular columns, to reach the most common people in my country. Specially, writing in Bangla helps students to understand critical debates more easily. (B6)

I feel if I had training in writing in Croatian, I would be doing it. I would like to address the local audience and bring things to them… Academics should be partners in a dialogue to produce knowledge that has a social effect. (A13).

It is important to keep writing in Lithuanian. To drop it would be somehow degrading. Students should be taught in both languages. (A14)

Discussion

This study has sought to understand the complex phenomena of multiliteracy and L2 monoliteracy, and how they influence the bond between research and policy. Interviews with a range of scholars whose first language is not English reveal that if they aspire to the career returns that membership of the global academic elite offers, not only do their local languages (except a handful of super-central languages) have negligible career value, and frequently no audience for their specialization, technical vocabulary, which may have been created in English and not translated, is also often lacking. Moreover, unlike English, because journals in those languages assume a fully fluent native-speaker audience that values stylistic complexity, they expect authors to write with more elegance than they would be in English, a language they may well have been trained to write in academically, unlike their first language. The cumulative effect of greater linguistic effort for diminishing career returns helps explain why many of the younger scholars I interviewed do not write in their first language.

Striving for professional success, these scholars are motivated to move towards the center and away from the periphery. This mobility has two consequences: first it contributes to the emergence of an overarching global academic community, communicating with each other and sharing research in IIJs through the medium of English—those I call the ‘international academic elite’—co-existing with a collection of local academic communities, not extensively in communication either with the global community or with each other, often perceived (A5, A7) as second rate. Especially for young researchers whose first language is not a super-central language [16], and who seek a successful academic career, there is every benefit in being connected to this global academic elite, and little or none in being connected to the community of the national language, especially when the national language policy in question may offer greater rewards for publication in English, as discussed above.

In 2000, in a public lecture on language policy in the European Union, the Dutch sociologist de Swaan [16] noted the tendency for political debates and political culture in the European Union to occur at national level and to be isolated from each other, with forces that mitigate against “intellectuals who might aspire to transcend the borders of nation.” In linking the concept of the European democratic deficit to language, de Swaan [16] argued that the absence of a common linguistic space constrains such debates to the national level. This is not wrong. What I argue here is that the intellectual sphere, which can and should inform and influence policy and politics, does already “transcend the borders of nation” through English. Yet it is not enough for democracy to have a European (or world) space in English on the intellectual level if it does not intermesh effectively with national socio-political communities that function in the local language. de Swaan is right that “intellectuals who…aspire to transcend the borders of nation” run a risk; it is not a personal risk, however, but a risk to the nations they dissociate themselves from [16]. When the most promising young scholars disengage from local academia and from local societal contribution because not only the nature of publishing in the academic world, but also ill-thought-through policies encourage them to do so for career gains, transcending borders brings no benefit to the nation but only to the individual.

How then can national governments or universities, where the decision is theirs, act to ensure communication between the global and the local? First, at the level of teaching, it is important that prospective scholars are taught writing both in their native language and in English, and preferably in the former first, for a variety of practical, psychological and cultural reasons [17]. This in turn entails that written assignments that involve and develop argumentative and analytical skills are set in the first language, so that students have ample chance to practice these. Although much literature will need to be read in English, the value of local knowledge and research in solving local problems should be emphasized where possible. As one trilingual young scholar in group B commented:

I don’t really publish in my other languages, but what I do do is when I write an article in English I make sure I read and incorporate all the relevant literature that’s available in my other languages. I think that’s very important. (B5)
Second, while university and national policies would be ill-advised to stop incentivizing publications in international high-impact journals [3,7,10,12] rewards and incentives need to be constructed and adequately weighted so that those who write both academically for the international community and locally in the genres of policy debates and other outreach areas are rewarded more than those who write only for international research or only for the local community. The application of academic knowledge to local contexts and audiences will be most effective if it is recognized as important by young scholars from the beginning of their career. While it is beyond the scope of this article to elaborate the details of such a system, clearly some reward for outreach writing will have a more positive impact than none at all.

An international English-writing academic elite, like Huntington's Davos Culture, risks becoming disengaged from the vast majority of the world's population if it does not interact with national and local communities. Multiliterate scholars can, do, and should do this. And if they cease to do it because universities and education ministries institute policies that fail to recognize that both the creation of knowledge and its application to specific contexts are valuable academic activities to be encouraged and rewarded, the consequences for society are not positive.

Conflict of Interest

No potential conflict of interest relevant to this article was reported.

References

Appendix 1. Questions for interview

In which languages do you sometimes or regularly write for publication? Which languages do you write more/less in?
Have the languages you write in changed over time? How?
What factors help you decide what language to write in?
(prompt: audience? topic? purpose?)
Do you write different kinds of text or for different audiences in different languages?
Do you write differently in different languages? How does the chosen language affect the way you write?
If you don't write in your first language, why not?

Appendix 2. Questions for questionnaire

In which languages do you sometimes or regularly write for publication? Which languages do you write more/less in?
Do you write different kinds of text or for different audiences in different languages?
What factors help you decide what language to write in?
(prompt: audience? topic? purpose?)
Do you think it is important for academics to write in their first language?
Authors’ perspectives on academic publishing: initial observations from a large-scale global survey

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Abstract

Authors are at the heart of academic publishing, but their voices are underrepresented in discussions about improving the academic publishing system. To understand the viewpoints of authors on various aspects of academic publishing and the challenges they face, we developed a large-scale survey entitled “Author perspectives on the academic publishing process” and made it available in December 2016. The survey has received 8,795 responses; this paper is based on the interim results drawn from 5,293 survey responses, and presents some interesting and thought-provoking trends that were observed in the authors’ responses, such as their interpretation of plagiarism and decisive factors in journal selection, as well as their thoughts on what needs to change in the publishing system for it to be more author-friendly. Some of the most important findings of the survey were: (1) the majority of the authors found manuscript preparation to be the most challenging task in the publication process, (2) the impact factor of a journal was reported to be the most important consideration for journal selection, (3) most authors found journal guidelines to be incomplete, (4) major gaps existed in author-journal communication, and (5) although awareness of ethics was high, awareness of good publication practice standards was low. Moreover, more than half of the participants indicated that among areas for improvement in the publishing system, they would like to see changes in the time it takes to publish a paper, the peer review process, and the fairness and objectivity of the publication process. These findings indicate the necessity of making the journal publication process more author-centered and smoothing the way for authors to get published.

Keywords

Academic publishing; Author perspectives; Journal guidelines; Journal submission system; Peer review
Introduction

Scholarly publishing is constantly evolving through innovations in publishing models, peer review types, avenues of research dissemination, and so on, with the intention of filling known gaps and building a better publishing system. However, conversations about existing gaps and ways to improve the system tend to stay among decision-maker groups, such as journals, publishers, and funders. The views of authors—who form the core of the publishing system—tend to be underrepresented. It is vital to capture the views of authors, who are both creators and consumers of scientific literature. Understanding their viewpoints could provide stakeholders of science with a roadmap to develop an author-friendly system.

During our interactions with numerous authors, we realized that despite advances in the academic publishing system, authors continue to face several grassroots-level problems. The results of our previous survey entitled “International journal editors and East Asian authors: two surveys” [1], which were published in 2013, revealed major gaps between the challenges East Asian authors face in academic publishing and how journal editors perceived submissions from East Asia. To build on this understanding, we sought to obtain an in-depth global perspective of the changes authors want to see in the publishing system. Based on the data we have gathered so far, we will present some thought-provoking trends that we identified. Further, although our previous survey differed drastically from the current one with respect to sample size and scope, we will discuss some apparent similarities and differences in trends observed in the 2 studies.

Methods

We launched the large-scale survey entitled “Author perspectives on the academic publishing process” [2] with 37 questions covering a wide range of topics such as the challenging aspects of journal submission, openness to publishing open access, understanding of publication ethics, and other issues faced by authors. An important aspect of the survey was that it collected authors’ thoughts on the specific aspects of academic publishing that they would like to see changes in. The survey was distributed in 5 languages: English, Chinese, Japanese, Korean, and Portuguese. So far, we have received over 8,795 responses. The interim report based on responses from 5,293 participants gave us enough data to observe trends and to prepare an interim report [3]. The plurality of survey participants (35.5%) indicated that they had published fewer than 5 papers. For many of them, (38.3%) English was not their first language, and they found writing in English to be challenging. The top 3 geographical areas the respondents hailed from were China (1,493), Brazil (909), and Korea (306).

Results

Manuscript preparation is the most difficult part of journal submission

One of the basic steps to getting published is making the manuscript publication-ready and ensuring a good submission package. However, the majority of the participants indicated that they struggled the most when it came to manuscript preparation (33.8%) and preparing the submission package (18.2%) (Fig. 1). The data from the previous survey [1] corresponded to this trend, as the majority of respondents ranked manuscript preparation as the most challenging task. While a critical element to consider is that most of the respondents of these surveys were not comfortable writing in English, the authors were primarily researchers and may not have possessed specific writing skills. Particularly when it comes to early career researchers, mentors or institutional heads should ensure that support and guidance are extended to help these early-stage researchers prepare their manuscripts for submission.

Impact factor is the most decisive factor in journal selection

The credibility of the impact factor has been brought into question time and again [4]. However, authors continue to give it precedence over other factors when it comes to journal selection. Most participants stated that the impact factor was their primary consideration, and the other 2 aspects that followed closely were the presence of similar papers published in the journal and a short time to publication or rapid publication (Fig. 2). This is a slight shift from the previous survey [1], in which the majority of respondents rated the topics and types of articles generally published in the journal as more important than the Impact factor. Institutions, as well as authors, regard publishing in a journal with a high impact factor to be prestigious [5]. This skews the main purpose of publish-
ing research, which is to use the most appropriate channels to make research known to peers and to influence decision-makers. Authors might tend to disregard critical decisive factors such as the target readership and the match between the paper and the journal’s scope, and place a disproportionate emphasis on a journal’s impact factor.

Most authors find journal guidelines to be incomplete
Every journal has its own specifications about submission requirements, formatting style, and presentation. But how clear and complete are these guidelines? Our previous survey [1] indicated that the greatest proportion of authors (34%) found journal submission guidelines to be unclear but complete. Most editors (76%), in contrast, were of the opinion that the guidelines were clear and complete. This indicated a clear divergence in views between authors and journal editors. However, the data based on the current survey’s interim results point to journal guidelines being generally clear but incomplete, as indicated by a plurality of the participants (41.8%) (Fig. 3). As the number of journals and their publication volume are increasing, journals need to focus on authors’ needs and challenges. Small changes such as ensuring that the guidelines are clear, cover all issues that authors are concerned about, and are easily visible/more prominent on the journal website would make the submission process smoother for authors.

Major gap in author-journal communication
If faced with a problem during the journal submission process, what would an author do? It might be a common assumption that authors would contact editors to get their questions resolved. However, the responses to the latest survey point to a significant communication gap between authors and journal editors. As many as 17.4% of respondents stated that they were scared to contact the journal, 16.6% pointed out that they were unaware of being allowed to contact the journal, and 14.8% indicated that they were unaware of how to contact the journal. Getting published is crucial for researchers, but while going through the publishing process they are likely to be working on other research projects. In such a case, hesitation to contact the journal or not being able to find information on how to initiate communication could be a major hindrance for authors. This highlights the need to make the publication process more author-friendly.

Increased awareness of publication ethics, but less so of good publication practice standards
With greater reporting of cases involving misconduct, ethics has become a widely discussed topic in the publishing industry. The survey respondents showed variation in their understanding of what constitutes plagiarism and who should receive authorship credit: 85.5% identified using text from a previous study/someone else’s work, without rewording or using quotes, as plagiarism and only 57.3% said that reusing text from one’s own previously published study, without citing one’s own study as the source, constituted plagiarism. This indicates that authors were aware of plagiarism in the broad sense of the term but did not a sufficiently nuanced grasp of the nitty-gritty details of plagiarism.

The majority of the authors (81.0% of 1,726) who were approached by a journal guaranteeing publication did not submit to such journals, primarily (67.8%) because they did not
trust them. This shows heightened awareness of the existence of predatory publishers.

Disappointingly, though, almost half of the authors (48.5%) indicated that they were not familiar with industry-recognized good publication practice standards such as the guidelines of the COPE (Committee on Publication Ethics), ICMJE (International Committee of Medical Journal Editors), and CONSORT (Consolidated Standards of Reporting Trials) (Fig. 4).

How do authors envision the ideal academic publishing system?
The academic publishing system is going through disruptive changes to tackle various issues, such as looking to create research impact, ways to influence policymakers, and finding ways of acquiring funding. However, some basic issues may fail to be noticed, and these affect the lives of authors the most. The most urgent current need is to ensure that authors’ voices are heard and acted upon.

We asked the participants whether they would like to change anything about the academic publishing system and what that might be. Approximately half (51.7%) indicated that they would like to change something about the publishing system and specified the change they wished to see in a subsequent section for comments. However, the other half (48.3%) indicated that they did not wish to change anything. Of the suggested changes, time to publication, peer review process/quality, and fairness topped the list, which are indicative of the main concerns of authors worldwide (Fig. 5).

This indicates that the system must be made more friendly and transparent for authors to be able to pursue their research without having to compromise on basic necessities such as fairness, time to publication, and being able to identify and make sense of journals’ guidelines.

Discussion
As the above results indicate, this survey represents a treasure trove of valuable perspectives from authors that provide insights into the problems authors face, their awareness of ethics, and how they view academic publishing. The main responses of the authors were clustered around the following themes: the challenges of manuscript preparation, the importance of a journal’s impact factor, incomplete instructions to authors, difficult communication between authors and editors, and low awareness of good publication standards. Furthermore, authors wanted an improved peer review process and fair treatment of their manuscripts. Because this was a rare large-scale survey of authors’ opinions, our results are a good resource to understand authors’ thoughts, perceived difficulties, and behaviors in writing manuscripts or selecting journals. There will be more responses and the further data will be analyzed more intensively.

This study had the following limitations. First, there was no gender identification. If gender had been identified, a different response pattern according to gender may have been found. Second, no in-depth statistical analysis was conducted to compare responses by groups for each item. If such a test had been performed, it would have been possible to interpret the responses more precisely. Third, a content validity test for the survey questionnaires was not done. The questionnaire items were described arbitrarily. If the present questionnaire tool is to be used in another study, a validity test should be done.

Despite those limitations, the results of this study provide us with extensive information on authors’ opinions on submission, review, editing, and publishing, due to the large number of responses. In conclusion, these findings are indicative of what publishers, journals, and editors need to do in order to support authors, improve the quality of publications, and make the publishing process easier for authors. Authors should be trained more intensively on how to write scholarly papers. Furthermore, editors should do their best to meet authors’ needs, such as by providing a rapid decision process or making more precise and clear instructions available to authors.

Conflict of Interest
No potential conflict of interest relevant to this article was reported.

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Comparison of the patterns of duplicate articles between KoreaMed and PubMed journals published from 2004 to 2009 according to the categories of duplicate publications

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Abstract
This study compared the patterns of duplicate articles between KoreaMed and PubMed journals based on a division of duplicate publications into the 4 categories of ‘copy,’ ‘salami’ (fragmentation), ‘imalas’ (disaggregation), and ‘others,’ as well as in terms of the 11 subcategories suggested by Bae et al., which further elaborate on those 4 main categories. We hypothesized that these 2 groups of articles would show different patterns of duplication. Duplicate publications were identified in a random sample of 5% of the articles from the KoreaMed database published between 2004 and 2009, while all articles with the publication type of ‘duplicate publication’ were selected from PubMed over the same period. The selected articles were classified based on the 4 categories and 11 subcategories of duplicate publications, and the data from the 2 groups were compared. A total of 108 articles were selected from KoreaMed and 45 articles were obtained from PubMed. The category of copy was the most common in both databases. The next most frequent pattern was imalas (disaggregation). Pattern of duplicate publication between 2 databases showed no correlation (P = 0.8754). Although the 108 articles from KoreaMed were allocated to all 11 Bae et al.’s subcategories, those from PubMed were allocated to only 8. The above results showed that the articles in the 2 databases had different patterns of duplication, as defined in terms of the 11 subcategories. The use of these 11 subcategories will help journal editors to develop an appropriate framework for considering a variety of duplication types.

Keywords
Factual databases; Korea; Medical writing; Publications; PubMed

*These two authors contributed equally to this study as the first authors.
Introduction

Out of 114 randomly selected retracted articles from KoreaMed (https://koreamed.org), a database containing abstracts of the medical literature from Korea published from 1999 to 2016, the most common reason for retraction was duplicate publication (66 cases, 57.9%) [1]. The duplicate rate in medical journals published in Korea was relatively high: 5.9% in 2004, 6.0% in 2005, and 7.2% in 2006. However, it decreased to 1.2% in 2009. Of all duplicated articles, 53.4% were classified as ‘copies,’ 27.8% as ‘salami’ (fragmentation), and 18.8% as ‘imalas’ (disaggregation) [2]. Duplicate publication was the cause of 149 retractions (18.1%) of the 821 retracted articles in PubMed published between 2008 and 2012 [3]. Although duplicate publication in the medical field itself is not harmful to medical practice or patient safety, it may weaken the validity of meta-analyses [4]. An increase was observed in the mean effect size and fail-safe number with duplicated data when duplicate articles were included in meta-analyses, despite the presence of only 6 duplicate publications out of the 1,194 articles that were used in meta-analyses by Korean authors [5].

To define and analyze the phenomenon of duplicate publications, a classification of duplicate publications is necessary. von Elm et al. [6] found 6 duplication patterns after comparing the study samples and outcomes of duplicates and the corresponding main articles from 141 systematic reviews on anesthesia or analgesia as follows: identical samples and identical outcomes; identical samples and different outcomes; increased sample and identical outcomes; decreased sample and identical outcomes; and different samples and different outcomes. In 2011, Bae et al. [7] analyzed the patterns of

| Table 1. Classification of duplicate publications based on papers sampled from KoreaMed from 2004 to 2008 [7] |
|---|---|---|
| **Category** | **Subcategory** | **Explanation** |
| 1 | Copy | |
| 1-1 | Complete copy with different language | This occurred when the same content was submitted to at least 2 different journals and published without permission from both journal editors. If permission was received from both journal editors, it could be published as a secondary publication. |
| 1-2 | Complete copy with the same language | This occurred when the literature database did not include one of the journals. The authors incorrectly believed that it was not possible to trace the duplicate publication or they were not aware of the concept of a duplicate publication. |
| 1-3 | Copy with some modifications with different language | Same as 1-1 above, except adding some data and revising the Discussion section. There was no difference in the conclusions. |
| 1-4 | Copy with some modifications with the same language | Same as 1-2 above, except adding some data and revising the Discussion section. There was no difference in the conclusions. |
| 2 | Salami publication | |
| 2-1 | Salami publication with a divided sample number | This occurred when part of the data was used for one article and the other part or the whole dataset was used for the other article. The results may be the same or different based on the hypothesis. |
| 2-2 | Salami publication with a divided outcome | This occurred when the hypothesis or methods were changed after the publication of one article; therefore, the results may be the same or different. |
| 3 | Imaclas publication | |
| 3-1 | Imaclas publication with an extended sample number or extended study periods | This occurred when the number of subjects was increased or the observation period was prolonged. |
| 3-2 | Imaclas publication with an added hypothesis | This occurred when a hypothesis was added. |
| 3-3 | Imaclas publication with an extended sample number or extended study periods, and an added hypothesis | This occurred when the number of subjects was increased or the observation period was prolonged, and a hypothesis was added. |
| 4 | Others | |
| 4-1 | Reverse imalas | This occurred when the number of subjects was reduced. |
| 4-2 | Not classified above | Others not classified as above or difficult to classify. |
100 pairs of duplicate publications in the KoreaMed database and some other articles that were written by Korean authors and submitted to international journals. They proposed a new classification system of duplicate publications based on the 6 criteria suggested by Mojon-Azzi et al. [8] of having a similar hypothesis, similar numbers or sample sizes, identical or nearly identical methodology, similar results, at least 1 author in common, and no or little new information made available. However, the interpretation of “similar numbers or sample sizes” was extended from the original formulation of “90% or more of the studied materials, animals, or subjects are identical” to include the duplication of a significant number of materials, animals, or human subjects. Furthermore, the possibility of secondary publication was checked in the analyzed articles. Finally, a classification of duplicate publication with 11 subcategories was suggested, as shown in Table 1 [7]. This system enabled the comprehensive classification of a variety of patterns of duplicate publications observed in KoreaMed [7]. This system was developed based on an analysis of articles in the KoreaMed database, the contents of which are mostly from Korea. Thus, we investigated how this system would apply to PubMed (https://pubmed.gov) articles.

Therefore, this study compared the patterns of duplicate publications between KoreaMed and PubMed journals based on the new classification system of duplicate publications proposed by Bae et al. [7]. We hypothesized that the 2 groups of articles would show different patterns of duplication.

**Methods**

**Study design**
This was a retrospective analysis of 2 literature databases: KoreaMed and PubMed.

**Materials**
Duplicate publications were identified in a random sample of 5% of the articles from the KoreaMed database published between 2004 and 2009, while all articles with the publication type of ‘duplicate publication’ from PubMed over the same period were selected. It is difficult to find the publication type of ‘duplicate publication’ from KoreaMed because there was no input of the publication type in KoreaMed; therefore, the analysis was done from randomized samples. Meanwhile, the publication type of ‘duplicate publication’ was already recorded in the PubMed.

**Analysis**
The selected articles were classified based on the category of duplicate publication, as shown in Table 2 [7], and the data from the 2 databases were compared. Classification judg-
ments were made by 2 pairs of authors: SYK and HMC, CWB and SH. One pair checked half of the articles from each database. If both authors in the pair agreed, an article was included in a given category. The classification was performed on February 5, 2017, after reading and discussing the relevant articles. The concordance correlation was tested to establish correlations between duplicate articles from the KoreaMed and PubMed according to subcategories. For statistical analysis, DBSTAT ver. 5.0 (DBSTAT, Chuncheon, Korea) was used; this program is available from http://dbstat.com/.

**Results**

A total of 108 articles were selected from KoreaMed, while 45 articles were obtained from PubMed. The results are presented in Table 2 [7] and Fig. 1. The category of ‘copy’ was the dominant pattern in both databases. Of the 94 copies, the predominant subcategories were ‘complete copy with a different language’ (28) and ‘copy with some modifications with a different language’ (27). The next most frequent pattern was ‘imalas’. Of the 24 papers in this category, ‘imalas publication with an expanded sample number or extended study period’ was the predominant subcategory (19). Of the 16 ‘salami’ papers, the subcategory of ‘salami publication with divided outcomes’ (13) was the most prevalent. There was no concordance correlation between the 2 databases according to the 11 Bae et al. [7]’s subcategories (P = 0.8754).

**Discussion**

The above results show that our hypothesis that the patterns of duplication would differ between the 2 groups of articles was accepted. There was no concordance correlation between the 2 databases according to the 11 Bae et al. [7]’s subcategories. The identification of articles belonging to more categories in the KoreaMed database may reflect the presence of more cases, as well as the smaller number of articles from PubMed that were included. Among the duplicate publications from PubMed, it was difficult to detect duplicate publications belonging to the categories of ‘imalas publications with an added hypothesis’ and ‘imalas publications with an expanded sample number or extended study period, and an added hypothesis.’ This difficulty may be a limitation due to the number of articles sampled from PubMed. If editors are appropriately vigilant in detecting imalas publications, more cases may be detected. The above results will help journal editors develop an appropriate framework for considering a variety of duplication types.

The primary limitation of this study is the small number of duplicate articles from PubMed due to the short period of publication. In this study, publication period was identical in 2 databases. If the period were to be extended, more duplicate articles would have been included in the categorization. Although 2 authors in a pair discussed and reached an agreement regarding the classification of cases of duplication, there may have been the possibility for some bias. These frameworks were applied to medical journals, so a similar analysis for the fields of agriculture, engineering, the natural sciences, the social sciences, and the arts and humanities should be done, after appropriate adaptation, to confirm the general feasibility of this approach.

In conclusion, the new Bae et al. [7]’s classification of duplicate publications, containing 11 subcategories, can be used not only for medical journals from Korea, but also for journals in PubMed. A different pattern was found in the subcategories of duplicate publications between KoreaMed and PubMed. We recommend that scholarly journal editors and librarians adopt the Bae et al. [7]’s classification of duplicate publications in order to categorize duplicate publications more precisely. More work on categorization will confirm the feasibility of this classification system.

**Conflict of Interest**

No potential conflict of interest relevant to this article was reported.

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![Fig. 1. Comparison of the patterns of duplicate publications between papers sampled from KoreaMed and articles with the publication type of ‘duplicate publication’ from PubMed from 2004 to 2009, based on the 4 categories of duplicate publications.](http://www.escienceediting.org)


Arbitral action and preventive methods against predatory journal practice

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Abstract

As open access model of journal publication increases, predatory journals, which deceive scholars to publish journals in fake database websites and exploit them for publishing fee, is also increasing. There are two types of predatory journals. First, journal hijacking and cybersquatting generally create fake database website by mimicking authentic database website, thereby defrauding scholars for publication fee. Second, journal phishing use scam emails to steal scholars' personal information. If scholars suffered damage from predatory journals, scholars can take either arbitral or judicial actions. Arbitral action follows arbitral resolution process termed Uniform Domain-Name Dispute-Resolution Policy. Scholars can join Uniform Domain-Name Dispute-Resolution Policy proceeding with legal entity that has right to authentic database website, which will result in cancellation or transfer of fake database website. In contrast, scholars can take judicial action under Anti-cybersquatting Consumer Protection Act, which may help scholars to recover an actual monetary damage from predatory journals. Nonetheless, taking precaution to avoid predatory journals is the best course of action, rather than going through arduous cure procedures. Scholars may prevent predatory journals by carefully examining fake database website names or email addresses, or observing unreasonable number of published article issues in predatory journal websites.

Keywords

Asian Domain Name Dispute Resolution Center; Cybersquatting; Journal hijacking; Journal phishing; Uniform Domain-Name Dispute-Resolution Policy

Introduction

In June 2016, a scholar in Korea submitted his manuscript to phishing email 'jeet@jeet.us' by following the instructions on the phishing website (http://www.jeet.us), because he misunderstood the phishing website as the authentic journal database website, Journal of Electrical Engineering and Technology (JEET) [1]. He soon received a confirmation reply email of acceptance...
and expected date of publication. However, there was no further progress. He consequently inquired about his publication at ‘jeet@kiee.or.kr’, official email of JEET. During the correspondence, the scholar found out that the previous email address, jeet@jeet.us, which he sent his manuscript at, was a phishing email. Because there was no monetary loss due to absence of request for publication fee, police investigation was unavailable. This is a typical case of predatory journal practice, which can be referred to as journal phishing, journal hijacking or cybersquatting. Predatory journal practice shows new legal challenge to contemporary academic journal publications. This article will touch on arbitral actions and prevention methods.

**Alternative Dispute Resolution**

In 1999, the Internet Corporation for Assigned Names and Numbers (ICANN) was formed in order to assume responsibility for administering domain name systems internationally [2-4]. ICANN’s intellectual property policy then soon established a compulsory arbitral resolution process called the Uniform Domain-Name Dispute-Resolution Policy (UDRP), for dealing with cases of cybersquatting [2,4]. By imposing contract between an accredited domain name registrar and its customer (domain name registrant), UDRP makes every registrant to adhere to register warrant terms [3]. The register warrant terms include, but not limited to: (1) to the best of the registrant’s knowledge, the registration of the domain name will not infringe or violate the rights of any party; (2) the domain name is not being registered for an unlawful purpose; (3) the domain name will not be knowingly used in violation of any applicable laws or regulations [5].

Any individual or legal entity that owns trademark can initiate the UDRP proceeding by filing a written complaint to an approved “dispute resolution service providers” against registrant who violated warrant terms [2,3]. The approved dispute resolution providers exist internationally, including the World Intellectual Property Organization mediation and arbitration center and the Asian Domain Name Dispute Resolution Center (ADNDRC) [2,3]. The ADNDRC Seoul office manages disputes in Korea [6].

Even though individual scholars do not own journal database or domains’ trademark, they may potentially join journal database owners or administrators in the UDRP proceeding. There are two grounds that support this potential class proceeding. Foremost, the UDRP proceeding allows multiple parties to file a single complaint where the parties have a common interest in the trademark allegedly infringe [5]. Hence, the UDRP proceeding may allow scholars who are harmed by journal hijacking to join the complainant, because the hijacked website potentially infringed scholars’ right and trademark in the journal.

In addition, scholars’ potential monetary or security damage from journal hijacking will satisfy the UDRP proceeding’s substantive requirements for a successful complaint. There are three substantive requirements for the UDRP proceeding’s successful complaint [3,5].

First, the domain name should be identical, or confusingly similar to a trademark or service mark in which the complainant has rights [5]. The UDRP proceedings often held that domain names comprised of misspellings of marks, to the extent that they are identifiable as misspellings, to be confusingly similar to authentic trademarks [5]. Because cybersquatters generally utilize typosquatting to create confusingly similar domain names to that of authentic journal database, the first requirement can be easily satisfied.

Second, the Respondent should not have right or legitimate interest in the domain name [3,5]. If cybersquatters purposely hijack journals by mimicking authentic journal database domains, they certainly do not have right or legitimate interest in the authentic domain name. Hence, the second requirement can be also satisfied.

Third, the domain name should be registered and used in bad faith [5]. In *Caesar World, Inc. v. Stephens*, the UDRP proceeding panel held that the use of domain name to attract internet users for commercial gain, by creating confusingly similar domain name or endorsing complainant’s mark, is an example of bad faith [7]. In fact, the UDRP panel penalizes almost all manner of cybersquatting, because cybersquatting satisfies UDRP proceeding’s substantive requirements for a complaint in relatively straightforward manner [8].

Consequently, if a scholar who lost monetary or security interest joins the UDRP proceeding, his/her damage may be used to satisfy the bad faith requirement [8]. In this case, the UDRP proceeding may allow the scholar to join the complainant by holding that the scholar’s interest is at the stake of the proceeding.

**Arbitral Procedure in Korea**

In Korea, there are two different alternative dispute resolution centers against cybersquatting. The first center is the Internet Address Dispute Resolution Committee (IDRC). IDRC was established in 2004 in order to administer national domain name ending with ‘.kr’ [9]. The second center, ADNDRC Seoul office, regulates disputes arising out of general domain names that are registered in ICANN [6]. ADNDRC Seoul office thus assumes the World Intellectual Property Organization’s position in Korea [9].

If a Korean scholar suffers from journal phishing or hijack-
ing mimicking national domain (.kr) database, s/he can commence arbitral proceeding by going through seven steps under the IDRC guidance (Fig. 1) [10]. First, scholar should prepare complaint and submit it to the IDRC. IDRC will then send receipt to the scholar [10]. Second, IDRC will collect process fee and documents including complaint. Then, it will request limitation on domain name change to domain registrar and registrant [10]. Third, IDRC will request response brief from the registrant [10]. The registrant has 14 days to respond from the day the registrant receives the IDRC request for response brief [10]. Fourth, IDRC will collect response brief from the registrant [10]. Even if the registrant does not submit the response brief, the UDRP proceeding will continue [10]. Fifth, IDRC will appoint arbitral panel with either one or three personnel. Sixth, arbitral panel will issue the decision generally within 14 days of the appointment of the panel [10]. Lastly, if the complainant prevails and the registrant does not appeal within 15 days, the domain name registrant will either cancel the domain name registration or transfer the domain to the complainant [10].

The UDRP proceeding in Korea is similar to the IDRC arbitral proceeding, except for the following few steps [11]. First, scholar can submit the complaint to ‘kidrc@adndrc.org’ or using online submission system [11]. Second, the registrant has 20 days, instead of 14 days, to respond to the complaint [11]. Third, ADNDRC Seoul office appoints either one or three personnel arbitral panel instead of IDRC [11]. Finally, if the complainant prevails, the registrant has 10 days to appeal in the court [11].

Because the UDRP proceeding’s remedies are limited to the cancellation of the domain name registration or transfer to the complainant, scholar’s potential monetary damage will not be compensated [5]. Consequently, scholar can initiate legal proceedings either before or after, or even at the parallel track with the arbitral proceeding. It is important to note that arbitral decision is not binding on courts and the judicial decision overrides arbitral decision [5].
Prevention

Here are few guidelines that scholars and journal database administrators can follow in order to avoid cybersquatting. First, carefully examining spelling or symbols of hijacked journal’s domain name may help scholars to discern authentic and fraudulent domain names. Second, observing suspicious journal website’s unreasonable number of published article issues and index may help scholars to avoid journal hijacking. Third, carefully observing spear phishing email’s “from” and “reply to” sections may prevent journal phishing. In spear phishing email, address of “from” section is generally different from “reply to” section. In addition, scholars should avoid any embedded links or downloading suspicious attachment files. Fourth, ignoring prize or warning messages about account closing will prevent journal phishing. It is best to ignore and avoid these click baits.

Conclusion

In order to prevent journal phishing and hijacking, scholars and academic community must increase awareness and heighten knowledge of possible preventive and protective methods. Recently, academic journals’ editors are constantly threatened by possible cyber-attacks, which seriously damage the academic integrity of scholars and institutions.

Even though arbitral and legal resolutions exist to counteract cybersquatting, as with all other internet frauds, efforts to cure the damage may be limited in practice. Therefore, academic institutions and scholars should be always attentive to preventive measurements against possible journal phishing and hijacking attacks.

Conflict of Interest

No potential conflict of interest relevant to this article was reported.

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Citation performance of Indonesian scholarly journals indexed in Scopus from Scopus and Google Scholar

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Abstract
Citation frequency is an important factor for estimating the quality of a scientific journal, and the number of citations that an academic paper receives is often used as a measure of its scientific impact. This study aimed to characterize the citation performance of scientific journals published by Indonesian publishers that have been indexed in Scopus by analyzing the number of citations available in the Scopus database and Google Scholar. The results of the study identified 30 Indonesian journals that have been Scopus-indexed, of which 22 were listed in SCImago Journal Rank up to October 2017. Journals in the engineering field were the most cited, with 2,427 citations, including 930 self-citations. A large proportion of the citations were of recently-founded journals. The mean proportional difference in the citation frequency between Scopus and Google Scholar was 14.71%.

Keywords
Citation analysis; Google Scholar; Scholarly journal performance; Scopus

Introduction
Scopus is a multidisciplinary database, with 67 million records (as of August 2017) and more than 22,794 peer-reviewed journal titles in the life sciences, social sciences, health sciences, and physical sciences. Records in the database start from 1,823, and references are listed starting in 1996 [1]. Google Scholar is a search engine that searches the scholarly literature, including journal articles, proceedings, theses, dissertations, books, book chapters, reports, manuscripts, newsletters, encyclopedia entries, government documents, and patents. Citations are identified through intellectual impact, and primarily comprise citations from journal articles, which account for almost 92% of citations on Google Scholar [2].

This is an open access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (http://creativecommons.org/licenses/by-nc/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.
We aimed to characterize the journal metrics of Indonesian journals indexed in Scopus, and in particular, to analyze the frequency of citations from Scopus and Google Scholar.

We hypothesized that Indonesian journals listed in Scopus would show a higher frequency of citations from Google Scholar than from Scopus. The results of this analysis will provide insights into the citation frequencies of Indonesian scholarly journals indexed in Scopus not only from Scopus, but also from Google Scholar.

**Study Design**

This was a descriptive study based on the analysis of a literature database.

**Definition of Terminology**

Scholarly journals refer to periodicals that publish research articles, are concerned with serious studies within a particular discipline, and follow an acceptable form of academic inquiry. Indonesian journals were defined as journals that indicated Indonesia as the country or territory of the publication.

**Data Sources**

Data for this study were obtained from 3 main sources: Scopus (https://www.scopus.com/sources.uri), which contains the master list of Indonesian journals indexed in Scopus; the SCImago Journal and Country Rank (http://www.scimagojr.com/index.php) powered by Scopus, which contains international scholarly publications and citations from Scopus between 2013 and 2016; and Google Scholar (https://scholar.google.co.id/)

Data collection was carried out from August 6 to 8, 2017. Thirty Indonesian scholarly journals indexed in Scopus were identified, of which 22 were available in SCImago Journal Rank.

**Analysis**

Subjected scholarly journals were classified according to research field. Furthermore, those were divided according to age of journal. After that, we compared the citation frequency of the journals published from 2013 to 2016, from Scopus and Google Scholar. The regression analysis between citation frequency from Scopus and that from Google Scholar was done.

**Indonesian Journals Cited in Scopus**

An analysis of journals according to field and age was conducted to understand trends in terms of which Indonesian scholarly journals were indexed and cited by Scopus. Figure 1 shows a classification of Scopus-indexed journals into 7 fields; most belonged to the field of engineering studies (38%). The number of citations from Scopus journals from 2013 to 2016 is shown in Fig. 2. The engineering field was the most cited, with 2,427 citations and 930 self-citations.

Indonesian scholarly journals were divided into 3 categories by age: 1 to 20, 21 to 40, and 41 to 60 years (Fig. 3). The largest number of journals was found in the group aged 1 to 20 years (54%); while the fewest journals were included in the group aged 21 to 40 years (21%). Figure 4 shows that recently-founded journals received the most citations. The citation and self-citation rates from 2013 to 2016 are shown in Fig. 5.

**Comparison of the Citations of Indonesian Journals in Scopus and Google Scholar**

Fig. 6 presents a comparison of the citations of Indonesian scholarly journals in Scopus versus Google Scholar from 2013 to 2016. Table 1 contains a detailed comparison of the cita-
Differences, Correlations, and Regression Analysis of Citations from Scopus and Google Scholar

The mean number of Scopus citations was 134.38, while the mean for Google Scholar citations was 719 (Suppl. 1). The variance of both citations was quite high. Pearson correlation analysis was used to measure the linear relationship between Scopus citations and Google Scholar citations. The Pearson correlation coefficient was 0.79, indicating a strong relationship between the Scopus and Google Scholar citations. The Pearson correlation coefficient was calculated as follows:

\[ r = \frac{\sum_{i=1}^{n}(x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^{n}(x_i - \bar{x})^2 \sum_{i=1}^{n}(y_i - \bar{y})^2}} \]

where \( x \) and \( y \) are the counts of citations in Scopus and Google Scholar, respectively, and \( \bar{x} \) and \( \bar{y} \) are their respective means.

The t-test for paired observations was used to evaluate the statistical difference between Google Scholar citations and Scopus citations. The hypothesis for the t-test was:

H0: The mean difference between Google Scholar citations and Scopus citations was equal to zero.

H1: The mean difference between Google Scholar citations and Scopus citations was not equal to zero.

The t-test resulted in a 2-tailed P-value of 0.0000847 (Suppl. 1). This result indicates that H0 was rejected, meaning that there was a significant difference between the mean number of Scopus citations and Google Scholar citations of Indonesian journals indexed by Scopus.

Figure 7 presents a scatter plot of Google Scholar citations and Scopus citations, showing a linear relationship. The adjusted R-squared was 0.60 (Suppl. 2). This result is quite good, and indicates that 60% of the variance that appeared in the Scopus citations was explained by the Google Scholar citations. The t-test for the regression analysis also showed that the regression coefficient was statistically significant, with a P-value of less than 5% of alpha. Given the strong statistical correlation of citations at the article level in Google Scholar and Scopus, the 2 databases are to some extent interchangeable for bibliometric analyses. The regression analysis also showed a strong statistical correlation at the journal level.

Policy of Indonesian Government to Support Scholarly Work

The government of Indonesia has supported the development of world-class universities and research institutions that focus on research, innovations, and publications. Given this focus,
publications and citations can influence decisions regarding research contracts and remuneration for academics and research group members. It is important to conduct a brief assessment of the yearly citation and publication performance of scientific journals. This policy has been endorsed by the Indonesian Ministry of Research and Higher Education by providing funding and incentives for journals indexed in Scopus with high citation rates, especially from SCImago Journal Rank and Google Scholar, because high citation frequencies indicate that the quality and visibility of a journal justify the

Table 1. Comparison of citations to Indonesia scholarly journals indexed in Scopus from Scopus and Google Scholar

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Fig. 7. Scopus citations versus Google Scholar citations.
investment of resources.

Competency of Indonesian Scholarly Journals According to Citation

In this context, how Indonesian journals fare in terms of receiving citations in international citation databases has not yet been studied. In this paper, we analyzed the citation results of Indonesian journals listed in Scopus in Scopus and Google Scholar. Citation frequency may reflect a journal’s value, authority, and use.

The self-citation rate of Indonesian journals indexed in Scopus from 2013 to 2016 ranged from 0% to 100%. An important consideration when evaluating self-citations that should be taken into account is the diversity of research output across disciplines. The social sciences and the arts and humanities produce and communicate knowledge differently from the natural sciences, engineering, computer science, and medicine.

Limitation

Citations in Google Scholar have certain flaws; among others, the Google Scholar effect is a phenomenon in which some researchers cite works that appear in the top results in Google Scholar, regardless of their contribution to the publication, because they automatically assume that such articles are credible and believe that editors, reviewers, and readers will expect to see that citation [3]. Google Scholar still has limitations in detecting areas of interest and incorrect research, as well as problems correctly identifying publications on the arXiv initial print server. The inclusion of characters between characters in the title resulted in incorrect search results, and inputting the authors of the wrong paper led to additional wrong search results. Some search results are even given for no understandable reason [4].

Google Scholar is vulnerable to spam [5]. Researchers from the University of California, Berkeley and Otto-von-Guericke University Magdeburg pointed out that the number of citations in Google Scholar can be manipulated and that nonsensical papers made with SCIgen were indexed in Google Scholar [6]. They concluded that Google Scholar should be used with caution, especially for calculating performance metrics such as the h-index or impact factor. Google Scholar started calculating the h-index in 2012, with the appearance of individual Google Scholar profile pages. The practicality of manipulating the H-index calculator in Google Scholar was shown in 2010 by Cyril Labbe of Joseph Fourier University, who successfully ranked “Ike Antkare” above Albert Einstein using a set of SCIgen-made documents citing each other (effectively an academic link farm) [7].

The last limitation of Google Scholar is the lack of filtering to improve quality. Google Scholar indexes as many journals as possible, including predatory journals that will contaminate the global scientific record. This means that information found on Google Scholar should be confirmed elsewhere. In the field of citation counting, Google Scholar proved to be easily manipulated, and included a number of duplicate citations.

Conclusion

The analyses presented in Table 1 and Fig. 6 showed that the mean proportional difference in citation frequency between Scopus and Google Scholar was 14.71%. Based on these data, it can be concluded that the hypothesis that Google Scholar citations would be more common than Scopus citations was proven. The citations in Scopus were mostly from Scopus-indexed publications, whereas the Google Scholar citations were a more diverse range of publications available online. Google Scholar has a scope and excellence of citations comparable to controlled databases such as Scopus, which is highly selective, has an English-language bias, and uses journals as the document source. Google Scholar also demonstrates the power of citation metrics that track all disciplines because of the inclusion of non-English, free, and open-access resources. Furthermore, scatter plot of Google Scholar citations and Scopus citations, showed a linear relationship (the adjusted R2 0.60) between two kinds of citations.

Conflict of Interest

No potential conflict of interest relevant to this article was reported.

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Supplementary Material

Supplementary file is available from: https://doi.org/10.6087/kcse.119

Suppl. 1. t-test for the paired mean difference of citations from Scopus and Google Scholar

Suppl. 2. Results of the regression analysis between citation frequency from Scopus and that from Google Scholar
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Reviving a scientific journal: challenges and strategies

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Abstract
The revival of a scientific journal presents unique challenges in comparison with starting a new journal. In this case study, the experiences encountered in the recent revival of the Manila Journal of Science are outlined and discussed. The Manila Journal of Science is a general science journal published by De La Salle University, Philippines. The challenges faced during the revival of the journal included competition for submissions, restricted budget allocations, peer review, and improving the journal’s reputation. Several strategies were adopted to address these challenges, and the journal’s performance thus far is promising.

Keywords
Journal management; Journal revival; Scientific journal

Introduction
One of the greatest challenges in journal management is sustaining the publication of an adequate number of papers that meet editorial standards. This problem can cause indefinite cessation of publication of the journal. This case study presents the experiences encountered during the revival of the Manila Journal of Science (MJS). MJS is the general science journal published by De La Salle University (DLSU) through the De La Salle University Publishing House (DLSUPH). The journal was first published in 1998 with a semiannual frequency. The journal regularly encountered erratic publications, resulting in broken volumes (Fig. 1). This can be attributed to the seemingly perpetual problem of attracting submissions. Prior to 2016, the latest revived volume of the journal, the most recent publication volume was 2013, in which only 4 papers were published. In the following sections, the challenges we faced in reviving MJS and the corresponding strategies adopted to address those challenges are discussed.
The publication of journals is considered to be one of the concrete embodiments of the educational mission of DLSU. As a consequence, the revival of MJS was viewed as a responsibility of the DLSUPH that needed to be fulfilled. However, reviving the journal was not as simple as advertising that the journal was accepting submissions again. Some of the problems that the journal previously encountered, leading to its temporary cessation, as well as new challenges, made the revival more difficult than starting a new journal. The problem of attracting submissions is amplified for a revived journal since potential authors may not be inclined to submit papers to a journal that has a record of an inconsistent publishing schedule. Aggravating the situation, the competition for submissions is becoming tougher due to the presence of several established science journals in the Philippines that are indexed in Scopus and Web of Science. To date, there are 23 science-themed Philippine journals that are either listed in the Clarivate Analytics (formerly Thomson Reuters) Journal Master list or Scopus [1]. Another problem encountered was inviting referees to evaluate manuscripts. Since the journal has yet to establish a solid reputation in the scientific community, successfully inviting referees was difficult. This problem was compounded by a tendency for the review time to be lengthy when a referee did accept an assignment. Another major challenge was that the revival of MJS came at a time of financial struggles. During that period, which continues to this day, the Philippines undertook educational reforms, the most notable of which was the K-to-12 program. The K-to-12 educational reform mandated the addition of 2 years to the basic education of Filipino students [2]. This meant that for 2 years, higher education institutions experienced a drastic decline in freshmen college enrollees, and that it would take around 4 years for college enrollments to stabilize. Since MJS is a university-published journal, its budget was reduced in response to the financial problems introduced by the K-12 transition [3].

Revival Strategies

The successful revival of MJS required the aforementioned challenges to be addressed. The first major change MJS adopted was to revise its publication format. Previously, MJS was a semiannual journal with print and online versions. The online version was hosted on the Philippine E-Journal website, which also hosted other Philippine scientific journals. The new model MJS adopted was to be exclusively online, using a new and dedicated website (http://www.manilajournalofscience.com.ph). This conversion addressed the restricted budget allocations, since print production accounted for 60% to 80% of the expenses incurred by the journal. In addition, the dedicated journal website facilitated the transition of MJS from a semiannual format to a ‘publish upon acceptance’ format. This operational revision was an attempt to address the competition for submissions. This new format, which significantly reduces the waiting period for an accepted paper to be published, is one of the unique selling points of MJS.

The journal recognized that peer review is the rate-limiting step in the publication process. Thus, a reasonably quick but thorough peer review process can significantly reduce the overall duration of the publication timeline. A viable strategy for identifying reliable reviewers is to personally ask researchers within the same university. This is effective since prior information is already available regarding the work ethic of the potential reviewers. However, for this to be possible, the manuscripts they have to review must be authored by researchers not affiliated with DLSU. Thus, the journal was promoted through social media. A Facebook page for the journal was established, which currently has 381 ‘likes’. A paid advertisement on Facebook was also shown for 2 weeks, with the promotion focused on accounts containing and using academic keywords such as ‘university,’ ‘research,’ ‘publish,’ and ‘science,’ among others. The paid advertisement was considered successful since it reached approximately 1,900 accounts. Sending promotional emails was discouraged, since this technique is often employed by predatory journals. Instead, personal messages to colleagues were sent, in which they were requested to help solicit articles from their respective circles.

Another way to attract external submissions is to boost the journal’s reputation. As a recently revived journal, this is difficult to achieve, since the journal has not yet been listed in reputable databases, such as Web of Science and Scopus. In order to ensure editorial quality, the DLSUPH, the unit that over-
sees and manages the journals of DLSU, established and implemented basic quality standards for DLSUPH journals. The aim of this policy is to ensure that the journals published by DLSU meet a certain set of quality standards. Some notable items included in the policy are the specification of at least 2 peer reviewers per manuscript and the requirement that a certain percentage of published papers must come from external authors, among others. Another approach taken to boost the journal’s reputation was to actively recruit editorial advisory board members. Almost all the visiting professors at the college were invited to become a part of the advisory board.

Current Status and Outlook

While it would be premature to claim that the revival of MJS was successful, positive and promising results have been observed, which can be attributed to the strategies that we employed. The number of published papers has significantly increased compared with past volumes. Another promising indicator is the increase in authorship diversity (Fig. 1). Papers authored and co-authored by non-DLSU affiliates have been becoming more common, and international submissions have also been recorded. Authorship diversity is one of the criteria for international accreditation in venues such as the ASEAN Citation Index [4]. Currently, the journal plans to sustain its momentum as it prepares to apply for inclusion in the ASEAN Citation Index.

Conclusion

In summary, the experiences encountered during the revival of the MJS were outlined. The challenges associated with the revival and the strategies adopted to overcome them are summarized in Table 1.

Conflict of Interest

No potential conflict of interest relevant to this article was reported.

References

The international reach of Crossref

Vanessa Fairhurst
Crossref, Oxford, United Kingdom

Introduction

‘Smart alone, brilliant together—collaboration is at the core of everything we do’ [1].

Publishers join Crossref for a variety of reasons but the primary one is the ability to register the content they produce to let the world know that it exists. They send information about that content—called metadata—to Crossref.

The metadata includes basic fields like titles and dates, but also unique labels that identify the content’s authors, affiliations, funders, and its location on the web. We call those labels persistent identifiers. Crossref metadata is used by numerous systems and organizations, like libraries, funders and others, that together help credit and cite the work, report impact of funding, and track outcomes and activity. Although there exists a number of organizations through which publishers can register digital object identifiers (DOIs) for their content, Crossref is widely recognized as the primary DOI registration agency for international scholarly content.

In addition to registering content and metadata with Crossref, there are other services members can participate in to enable research outputs to be easier to find, cite, link, and assess. Examples include Reference Linking, Cited-by, Similarity Check, Crossmark and the upcoming Event Data service.

On average, around 180 new members join Crossref each month, with members currently across 114 countries. In more recent years there has been a rapid growth in membership from outside of Crossref’s traditional West European and North American markets, with a large percentage of new members coming from Asia, Eastern Europe, and South America (Fig. 1).

Crossref is also involved in other industry initiatives like Metadata2020 (http://www.metadata2020.org), the OrgID Project (https://www.crossref.org/blog/the-organization-identifier-project-a-way-forward), PIDapalooza (https://pidapalooza.org), and Scholix (http://www.scholix.org). These underscore Crossref’s commitment to providing shared services, listening to the wider community and playing an active role within the industry.

Crossref LIVE Local Events

Each year Crossref holds a two-day annual event, traditionally in either Boston, USA or in London, UK. In 2017, the annual event was held in Singapore taking into account the large and increasing number of members in the region. However, in recognition of the need to interact with a greater number and range of members face-to-face, in their own countries and...
languages, Crossref additionally launched a series of smaller one-day events held in a variety of locations around the globe. In 2017 this included Seoul, Beijing, and Boston (Table 1) [2,3], with future events in 2018 planned to take place in Japan, South Africa, and India to name but a few.

Each of these one-day seminars cover key aspects of Crossref, information on how to be an effective member, how to participate in the different services, upcoming new developments at Crossref, and news of initiatives within the wider scholarly research community. The events also provide an opportunity for Crossref to gain feedback on their activities and to stay well connected with country/region specific developments and trends. Activities and content are tailored to take into account the country context, the attendees’ industry background, and any language or terminology difficulties.

Crossref collaborates with local organizations, often Crossref members themselves, to ensure that the events are applicable, appropriate and accessible [4]. Local partners help by advising on venue selection (sometimes providing a space to host the event at their own institution or offices), giving recommendations for speakers and content topics to be covered, and by helping source translation or interpretation services.

In addition to in-person events, a LIVE local event in Turkey was held online in the form of a 2.5-hour webinar. Webinar software enables organizations like Crossref to reach audiences where it just may not be feasible to hold an in-person event due to time or financial constraints, political upheaval or other instability in the area, or, as it is more convenient for the target audience on this occasion. This is particularly relevant if those wishing to attend are widely dispersed within the country or region, as it provides an alternative to traveling or to holding multiple events in the same locale.

Shorter webinars can be held on specific topic areas, in local languages, using country context examples. This enables members to get a live demonstration and explanation of services, a walk-through to registering content and metadata with Crossref, and gives attendees the opportunity to ask questions in real time. These sessions are recorded and shared, allowing participants and those who were not able to attend to view the recording at their leisure. However, the more that participate on the day, the richer the content can be, as input and questions from attendees is encouraged. Crossref is also then able to glean valuable feedback which it uses to ensure the webinar process, content, delivery and technology stay relevant and accessible to the audience, making continuous improvements.

### Crossref Ambassador Program

In order to reach members around the globe on an increased level, a wide team of people knowledgeable in the languages, cultures, and member needs in a variety of locations is re-

![Fig. 1. New members, segmented by region, who have joined Crossref within the last two years (January 1, 2016 to December 31, 2017).](http://www.escienceediting.org)
required. The Crossref team is highly skilled, however, with a total of 34 staff [5] (as of December 2017) based primarily in Boston, USA and Oxford, UK, Crossref simply does not have the necessary capacity in-house to provide the breadth and level of support that members require.

The Ambassador Program is a good example of one of the ways Crossref is responding to the needs and wishes of their membership community. Feedback identified a need for local experts to provide support in the local time zone and language, an increased number of training events both online and in person, representatives from Crossref at regional industry events, and to act as a liaison with the Crossref team.

Crossref ambassadors are volunteers who work within the international scholarly research community in a variety of different roles such as librarians, researchers or editors to name but a few. They are individuals who are well connected, value the work that Crossref does and are passionate about improving scholarly research communication. The program is also a way of officially recognizing and empowering a number of people who have already been working with Crossref for some time in a variety of ways and providing more support to those individuals.

The initiative has four primary objectives for Crossref: (1) to gain a deeper understanding of certain audiences or countries, (2) to increase outbound education, with both existing members and new audiences, (3) to improve communication with and between non-English speaking communities, (4) and to empower Crossref members to help and advise one another.

The program officially launches in January 2018 with a select, few individuals with whom Crossref already has a good working relationship, such as Jae Hwa Chang, manuscript editor at infoLumi in Korea, Edilson Demasio librarian at State University of Maringá-UEM in Brazil, and US-based Lauren Lissaris, Digital Content Manager at JSTOR. This will expand to include a larger number of ambassadors over time, providing a good representation of the geographical spread of Crossref membership. However, the intention is to keep the overall group fairly small, in order to maintain a personal connection and provide a high level of support to ambassadors.

A longer-term objective of the program is that it could play an instrumental role in the growth of Crossref, potentially aiding in the setting up Crossref offices and hiring of permanent staff in countries outside of the US and the UK. Some of the activities Crossref ambassadors will undertake are staying up-to-speed with Crossref developments, for example, by attending webinars and maintaining regular check-ins with the Crossref team; engaging in the online community platform by providing feedback, joining in discussions and helping other members to resolve issues posted to the group; writing blog posts, or contributing to newsletters; participating in beta-testing of new products and services; helping with local LIVE events, for example, providing recommendations on speakers or venues, helping with logistics and presenting at the event; helping with the translation of Crossref material and content into local languages; running webinars on different Crossref services in local languages; running training sessions locally with Crossref members; and representing Crossref at select pre-agreed conferences.

Crossref highly values the individual’s contribution and the voluntary nature of the ambassador role means that it comes with a high degree of flexibility. It is important that Ambassadors enjoy the work they are doing with Crossref by contributing in ways in which they feel comfortable, according to their interests, skills and time constraints. For this reason a good level of diversity among the pool of Ambassadors, not only geographically, but also in terms of industry, experience and role is important.

Crossref ambassadors will become an increasingly key part of the Crossref community—the first port of call for updates or to test out new products or services, and the eyes and ears within the local academic community—working closely with Crossref to make scholarly communications better for all. The benefits are far from one-sided, and the program should provide a mutually beneficial relationship for both the ambassadors and Crossref.

As valued members of the Crossref network, Ambassadors will be provided with comprehensive materials, training, endorsement and further support, to be beneficial not only in fulfilling their roles as ambassadors but more broadly in their careers. This includes an Ambassadors’ area on the Crossref website; a dedicated contact for any upcoming news, or to share ideas, queries or concerns; help with content for proposal calls, presentations, training and written articles; Crossref materials and giveaways (plus ambassador-branded materials); personal endorsement via Crossref; training on Crossref services and on wider relevant skills as necessary; first look at new Crossref developments; certification from Crossref on ambassador and training status; personal ambassador logo or badge for use on email, website and profile on the Crossref online community.

After the launch of the program in January 2018, there is a dedicated page on the Crossref website with more information https://www.crossref.org/community/ambassadors/, a blog introducing the first few ambassadors, and written features within both the internal and external Crossref newsletters. The program will also be featured in upcoming LIVE local events where people can speak to members of the outreach team, ask any questions, give suggestions or find out more about getting involved. A sign-up form is also available online.
for anyone who would like to submit an interest in the program, following which a member of the outreach team will be in contact to provide more information and discuss next steps.

Crossref recognizes that as remotely-working volunteers, processes need to be in place in order to provide the necessary help and support ambassadors need to succeed in their role. Ambassadors will be provided with comprehensive information when first joining the program, regular catch-ups will be scheduled to provide updates, answer any questions and to maintain a personal connection with the team. Ambassadors will also be able to arrange ad-hoc calls with the Crossref team as necessary. There will be an annual review to ensure both Crossref and the ambassador are happy with the level of commitment the role requires and the level of support provided.

Ambassadors will play a key role in Crossref’s upcoming community forum, which will provide an online, open platform where members can participate in discussions, pose questions to the group, give feedback and share ideas. As a public forum, the aim is to make it easier and faster for members to get their questions answered by either the Crossref team or a fellow member who may work within a similar context and/or be able to answer in their own language. It will also provide opportunities for members to share tips, news, and updates from their own organizations and sectors. There is a great value in members helping and communicating more with one-another about the ways in which they participate in Crossref and use Crossref metadata, rather than one-way communication from Crossref.

Additionally the platform enables Crossref to have a greater level of communication with members, manage relationships with ambassadors, and conduct activities such as polls and beta-testing. This allows for immediate feedback and input from a large pool of members, helping to streamline the technical and member support process.

However, a community platform should never be approached with a simple ‘build it and they will come’ mentality. It requires substantial time and effort to become a successful and engaged community. This will include selecting appropriate software, and creating content, codes of conduct, and other support documentation in multiple languages. It will involve moderation by Crossref staff, ambassadors, and engaged members of the community, recognized and empowered to help drive the community forward. It may be an ambitious project, but if done well, will prove to be of great value to both Crossref and its members.

**Conclusion**

Crossref’s reach and impact is truly international. In addition to being recognized as the leading DOI registration agency for scholarly content, it is in the unique position of providing a range of services and open source tools widely used within global academic research community. The shared infrastructure and open APIs mean that the rich metadata provided by Crossref members is openly available to be used in a variety of tools and projects, enhancing the discoverability of research to the benefit of the international scholarly community as a whole.

As Crossref’s membership continues to grow and become increasingly diverse, it is imperative for Crossref to expand its outreach activities to better support its members on a global scale. Initiatives such as the Ambassador Program, Crossref LIVE locals and the ‘Community at Crossref’ are ways in which the organization is addressing and responding to the needs of its varied and growing membership.

**Conflict of Interest**

No potential conflict of interest relevant to this article was reported.

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Sex and gender-related issues in biomedical science

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Introduction

“Gender” is a term commonly encountered in the media these days, but it seems that many people are not familiar with the exact difference between sex and gender. “Sex” refers to the biological classification of humans based on their reproductive systems and functions derived from chromosomal type or hormones, while “gender” denotes cultural attitudes and behaviors associated with stereotypical attitudes regarding a person's sex that shape our conceptions of masculinity and femininity [1,2]. I was also unfamiliar with this terminological distinction and was introduced to the importance of sex and gender-related issues in science at a meeting of the Korean Federation of Women’s Science & Technology Associations in 2014. The Korean Federation of Women’s Science & Technology Associations introduced the concept of gendered innovations to Korea and has been making efforts to spread awareness of these issues in all fields of science, including engineering, architecture, and biomedical science. As part of this effort, the Center for Gendered Innovations in Science and Technology Research was launched in February 2016.

In the biomedical field, the main sex and gender-related issues are the lack of gender-based analyses in clinical research and not using both sexes in animal experiments. Because doctors who treat patients know empirically that various diseases, such as irritable bowel syndrome, show a different clinical course in men and women, I readily accepted this concept and realized its importance. The problem of gender imbalance in clinical research has long been recognized; in fact, as early as 1993, the National Institutes of Health (NIH) enacted a policy ensuring that women and minorities are included in all human research and that an adequate number of participants are recruited to analyze gender differences in phase III clinical trials [3]. However, preclinical animal research is still mainly performed on male animals. Sometimes researchers do not perform sex-based analyses in experiments using both sexes, or even do not mention the sex of the experimental animals in the manuscript [4].

Personal Experiences with Sex-related Issues in Preclinical Studies

I am a gastroenterologist, but as a clinician with experience in basic experimental research and
Sex and gender-related issue in biomedical science

As a section editor of basic research for the Journal of Neurogastroenterology and Motility (JNM), I have become particularly interested in sex bias in preclinical research. When I first started exploring sex- and gender-related issues, I and Professor Moon Young Lee, of the Department of Physiology of my university, had coincidentally just completed an experiment investigating the effects of a high-fat diet and stress on inflammation and colonic motility using both male and female rats. Surprisingly, we found that a high-fat diet and stress induced very different effects according to sex. We presented this result at the Gender Summit 2015 in Seoul and had a chance to discuss it with foreign experts [5]. I then wondered about the distribution of the sex of the animals in the basic experiments published in JNM. JNM was a Korean domestic journal published from 1994 to 2009 and became an international journal in January 2010 as a joint official journal of several Asian neurogastroenterology societies. As expected, most studies used male animals and some did not report the sex of the animals at all [6]. Moreover, these problems were not resolved even after JNM became an international journal, which means that foreign researchers, as well as Korean researchers, did not pay attention to the sex of experimental animals (Fig. 1) [7].

Guidelines for Sex and Gender Equity in Western Journals and Funding Agencies

As I became more familiar with gender issues, I learned that guidelines for sex balance in animal testing have been already introduced, starting several years ago, by journals, funding agencies, and other biomedical science organizations, including the International Committee of Medical Journal Editors (ICMJE). The ICMJE presented “Recommendations for the conduct, reporting, editing, and publication of scholarly work in medical journals” and it has been updated through 2017 [8]. These guidelines emphasized that the terms “sex” and “gender” should be used correctly according to the aim of the study, and that appropriate-gender participants should be obtained at the study planning stage. In addition, authors should report the sex and/or gender of study participants, the sex of animals, and the sex of origin of in vitro cell lines, primary cells, and stem cells. Additionally, if the study was performed in only 1 sex, authors should explain the reason. The most important statement of the ICMJE guidelines is that analyses according to sex and gender should be performed routinely. Other guidelines, such as the ARRIVE (Animal Research: Reporting In Vivo Experiments) guidelines, also contain a statement regarding the importance of reporting the sex of animals used [9].

However, there are many obstacles to performing sex-related analysis in all animal experiments. The biggest problem is that researchers may avoid using both sexes in their experiments due to the additional costs and complexity of the design. To solve this problem, it is necessary for funding agencies to actively provide additional financial support for using both sexes, and at the same time, the journals that publish the studies should show an interest in sex- and gender-related issues and present their own guidelines. These 2 strategies have already been implemented by Western scientific societies. Major funding agencies, including the NIH, the Canadian Institutes of Health Research, and the European Commission, have presented guidelines for gender equity; in particular, the NIH has officially encouraged researchers to consider sex as a biological variable in NIH-funded research, and researchers should explain “how relevant biological variables, such as sex, are factored into research designs and analyses for studies in vertebrate animals and humans” when they submit research grant applications, since 2015 [10].

In addition to funding policies, the NIH held a joint work-
shop in June 2014 with over 30 basic and preclinical journals, including *Nature* and *Science*, to discuss principles and guidelines for reporting preclinical research in the biomedical field in a manner that facilitates reproducibility, rigor, transparency, and independent verification of the scientific experiments [11]. They recommended describing biological materials with sufficient information, including the source, species, sex, age, husbandry, inbred status, and strain of animals, and these recommendations are reflected in many Western journals [12]. There is no doubt that journals and their editors play as crucial a role as funding agencies in enabling researchers to realize that sex- and gender-based analyses are important and must be carried out.

**Current Status in Biomedical Science in Korea: Taking the First Step**

What about the situation in Korea? Unfortunately, most researchers, reviewers, and editors in Korea seem to be unaware of the importance of sex bias in preclinical research. Alternately, some of them may already be aware of these issues, but they may not be able to act accordingly due to various restrictions. I was a representative example of the former category. Despite having done experiments on sex-related effects in rats, I was embarrassed that the difference between the sexes seemed to be too great. Only after learning about sex bias issues in animal experiments, I was able to properly interpret these results and realized that the differences were probably natural. Nonetheless, I did not think that I should include sex bias issues in the authors’ guidelines of JNM until I learned that major journals in the West had guidelines for reporting sex/gender differences. Perhaps many researchers and members of the editorial boards of journals in Korea and other Asian countries are in a similar situation.

Fortunately, a meaningful forum about how to apply gendered innovations in biomedical journals in Korea, organized by the Korean Federation of Science and Technology Societies and Center for Gendered Innovations in Science and Technology Research, was held in November 2017. I presented to editors of several Korean journals on the sex and gender-related guidelines of leading Western biomedical journals and then they discussed the current situation of Korean journals and how to implement such guidelines. I expect that gendered innovations will take place soon in Korean journals. Journals from Asia, including Korea, are growing rapidly, but it is time for qualitative growth to be more important than quantitative growth in the future [13]. In this regard, addressing sex and gender issues will be an important factor in improving the quality of journals in terms of reproducibility, rigor, and transparency. However, not only should journals implement changes, but institutes that manage research grants should also pay attention to these issues and reflect them in their budgets so that actual gendered innovation can happen in biomedical science in Korea. In addition, universities, which employ most biomedical researchers, should educate their students about sex- and gender-related issues [14]. Finally, it is important to note that sex- and gender-related issues in biomedical science in Korea have been raised externally, not by biomedical experts themselves. In order to make the suitable improvements, researchers and editors in biomedical science, based on their expertise, should play a leading role in addressing this issue through research and journal policies.

**Conclusion**

Sex and gender issues are very important, especially in biomedical science and research. We should remember that not paying attention to this issue could result in harming human health. Moreover, we may lose the opportunity to make new discoveries and chances to cure disease. At this point, when members of Korean biomedical societies, including researchers and the editorial boards of journals, are beginning to recognize the importance of sex- and gender-related issues, a relevant quote from Leonardo da Vinci comes to mind. "I have been impressed with the urgency of doing. Knowing is not enough; we must apply. Being willing is not enough; we must do."

**Conflict of Interest**

No potential conflict of interest relevant to this article was reported.

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Life as an editor: developing a domestic journal to an international journal

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Introduction

“Our policy is not to spend money on subscriptions to Korean domestic journals,” the director of the library of the medical college where I worked as an assistant professor said on the other end of the phone. It was 1995, and the managing committee of the Korean Society for Medical Biochemistry and Molecular Biology (KSMBMB) had decided to request medical libraries in Korea to purchase a subscription to our society’s official journal.

In that year, the society decided to rename our official journal from the *Korean Journal of Biochemistry* (KJB) to *Experimental and Molecular Medicine* (EMM). Other Korean academic societies were publishing biochemistry and molecular biology journals at that time (the *Korean Biochemical Journal* and *Molecules and Cells*), and we thought that it was not necessary to publish another biochemistry and molecular biology journal in Korea. After long and intense discussions among our committee members, we reached the conclusion that our society needed a new scope and that it should be molecular medicine. In the 1980s to 1990s, experimental techniques developed by biochemists and molecular biologists, such as gene cloning, DNA sequencing, Southern, northern, and western blotting techniques, the expression of exogenous genes in prokaryotic and eukaryotic cells, and the production of recombinant proteins, began to transform medical science, allowing researchers to study human physiology and diseases at the molecular level. We thought that this new emerging field was promising and decided to pivot away from basic biochemistry and molecular biology and move towards molecular medicine. At that time, I was responsible for publishing KJB as the associate editor, and thus participated in this transition of our official journal. Professor Jeong-Sun Seo of Seoul National University played a leading role as the managing director in establishing the new scope for our society and transforming our journal into EMM.

“Why do you have the policy of not purchasing subscriptions to domestic journals?” “Don’t they just publish papers used to satisfy the degree requirements of graduate students and for the promotion dossiers and research grant applications of professors?” The library director of my college replied to my question with a sneering voice. In our continuing fiery dispute, the director maintained the position that all Korean domestic journals were garbage bins for useless papers that nobody wanted to read, and were only used for the purposes of authors themselves. Although the library director’s point was not totally wrong at that time, his derogatory
remarks about domestic journals were disheartening because they represented common negative views about domestic science journals among Korean researchers, and I was an editor of one of those domestic journals.

In retrospect, that quarrel with the library director was a turning point in my life as an editor of EMM. His humiliating remarks remained with me for a long time, ringing vividly in my ears. It made me want to leave behind the old way of manuscript handling and editing, and to step into an uncertain future.

Early Experience in Journal Publishing

My experience with journal publishing began in the late 1970s, when I worked as a research assistant in the Department of Biochemistry, College of Medicine, the Catholic University of Korea. At that time, my preceptor Professor Bong-Sop Shim was editor-in-chief of KJB, and he asked me to help him edit the manuscripts we received. Professor Shim played a key role in founding KJB in 1964. At first, KJB published papers written in Korean or English, but Professor Shim persuaded the other members of KSMBMB to convert KJB into an English-only journal in 1975, which was rare for domestic journals at that time. Currently, writing research papers in English is not unusual; in fact, it is mandatory for Korean scientists in order to publish their work in international journals. Moreover, most official journals of major Korean societies only publish papers written in English, because the editors and authors know that only English-language papers will be read globally. In 1975, however, it was not common for Korean scientists to publish their papers in international journals. Instead, most wrote their papers in Korean and published them in domestic journals. Therefore, it is understandable that there were objections from Society members against converting KJB into an English-only journal. Despite this change, KJB lagged far behind international standards.

I was appointed as an associate editor of KJB in 1991. During the 1980s, the previous editors of KJB experienced challenges in publishing KJB. KJB was scheduled to be published biannually, in June and December. However, its publication date would often be delayed for several months, and many errors were present in the published papers. Although scientific research in Korea expanded year by year, with a growing pool of Korean researchers and increasing research funding from the Korean government, the publishing practices of KJB (and other journals of Korean societies) did not improve much, and old practices were still retained. There was no peer review for submitted manuscripts, and all manuscripts received by the editor were published without major revision. Although the manuscripts were written in English, many were poorly written and hard to understand. Professional English editing services were not available at that time. Although there was a ‘guide to authors,’ many authors submitted their manuscripts without formatting them according to the requirements of KJB. As the only associate editor, I spent a lot of time editing the format and English writing of the submitted manuscripts. Most authors thanked me for my efforts. However, some authors got angry about how I edited their ‘complete’ manuscripts and protested strongly.

Even harder than manuscript editing was publishing issues on time. It took nearly a month for the printing company to publish a print issue from the completely-edited manuscripts. Since I needed at least a month to edit all the manuscripts, the official deadline for manuscript submission was 2 months before the publication date. However, just as now, authors tended to postpone the submission of their manuscripts to the last possible minute, and called me to ask me to do them the favor of delaying the deadline until they could send in their manuscripts. The result was that the publication schedule was compressed to the point that I had to spend 2 weeks doing nothing but editing manuscripts from early morning until late night. Even after the manuscripts were sent to the printing company, I had to spend 2 to 3 more days correcting typos with my weary eyes. Although this twice-a-year KJB publication schedule exhausted me each time, I felt gratified when a freshly printed issue of KJB was handed to me and the articles in the issue greeted me sitting in an orderly format. However, this author-centric manner of journal publishing had to be changed for the journal to progress.

Developing a Local Journal to an International Journal

When the managing committee of KSMBMB decided to change the scope and name of our official journal KJB to EMM, we explained our plan at a conference of society delegates. At that time, the Internet was emerging as a tool for scientists to search for and read research papers. Instead of going to the library and searching the Medicus Index or Biological Abstracts, researchers became able to search PubMed and view the articles they wanted on their office computer. Additionally, the advent of the Science Citation Index and its journal impact factor (JIF) led to the ranking of scientific journals, providing a more practical way for researchers to evaluate journals.

I thought that those enormous changes in global science publishing would make our society delegates understand the urgency of these issues and approve our plan without many objections. However, when I explained that in our new journal EMM, all papers would be peer-reviewed and only papers that obtained favorable recommendations from referees would be
published, there were objections and complaints from the audience, especially the senior members. They argued that the official journal of ‘our’ society existed for the benefit of ‘our’ society members, and that the members needed a journal that would publish ‘their’ papers easily. They claimed that academic societies published their own journals for that reason. They did not seem to know that many major international journals that peer-review manuscripts actually are the official journals of academic societies, although they publish papers authored by anyone, not only members of the society.

Additionally, other delegates objected to our plan to omit ‘Korean’ from the name of the new journal. They argued that since there are many famous ‘American’ and ‘British’ journals, it would be reasonable to add ‘Korean’ to our journal name. I replied by asking the delegates whether they knew of any major international journals with a name containing ‘German,’ ‘French,’ or ‘Japanese,’ and whether they thought that ‘Korean’ would be more recognized globally than those country names. I asked them why we should insist on having a regional tag in our journal name, since scientific knowledge is shared among global readers. Currently, journals published by Korean academic societies often do not have ‘Korean’ in their names. These changes did not come easily.

During the course of this fierce discussion about our new journal, the managing committee members firmly maintained our position that it was time to change our journal according to international norms. The humiliating remarks that I had received from the librarian of my college had given me the strength needed to stand firm against the objections to these changes.

In 1996, EMM began to be published in a new format with fully peer-reviewed articles. It was first listed in Science Citation Index in 1998 with a JIF of 0.162. After being listed, it took 7 years for EMM to cross a JIF of 2.0 in 2005, a rare success for a domestic journal at that time. However, the JIF of EMM showed only incremental growth over the next 7 years, to around 2.5. Some members of our society proposed that we should increase ‘self cites’ by urging authors to cite papers published in EMM, which I resisted.

**Cooperation with the Nature Publishing Group**

The editorial team of EMM had to endure another period of uncertainty when we decided to publish EMM as an academic journal of the Nature Publishing Group (NPG), which publishes *Nature* and many renowned scientific journals. It took almost 2 years from the time when we first met with representatives from NPG to the time when our new website launched, with the first article posted in January 2013. In the interim, we held many meetings of our editorial team with members of the managing committee of our society (which had been renamed as the Korean Society for Biochemistry and Molecular Biology) and working members of NPG. Many members of our society wondered about the benefits that would be obtained from this partnership and worried about the uncertain future. They said that they could not understand why we wanted to move onto such shaky ground when EMM was already stably ahead of other domestic journals. However, we decided to sail out into uncertain and risky high sea instead of a stable and safe inner sea. Professors Jeong-Sun Seo, Jong-Il Kim, and Kyung-Ho Choi of Seoul National University led the transition process and jointly bore its burden.

**Conclusion**

Today, I am sitting at my desk and reading manuscripts submitted to EMM. As has been the case for the last 25 years, editorial work has taken up much of my time at the office. Like most editors of academic society journals, I have had to divide my work into teaching, my own research, and journal editing. Sometimes I have felt my duties as an editor to be burdensome, and have been skeptical about the usefulness of my efforts. After such speculation, however, I return to the manuscript before me, hoping that my work will benefit the progress of scientific knowledge and help researchers and physicians to find new avenues in their work.

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No potential conflict of interest relevant to this article was reported.
How Asian publishers can compete with publishers in Europe and North America

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ALPSP 10th Anniversary Conference and Awards
Date: September 13-15, 2017
Venue: Grand Hotel Huis ter Duin, Noordwijk, Netherlands
URL address: https://www.alpsp.org/2017-Programme

This was the second time that I attended the Association of Learned and Professional Society Publishers (ALPSP, https://www.alpsp.org) conference and awards. I attended the eighth conference in London in 2015. The ALPSP is the one of the largest organizations of scholarly publishers, with offices located in Hertfordshire, United Kingdom. In North America, the corresponding organization is the Society for Scholarly Publishing (https://www.sspnet.org/). I was frequently asked whether I was a publisher or an editor. I am the editor of Journal of Educational Evaluation for Health Professions, but I have also worked as a managing editor. In the context of this conference, I was considered to be an editor-publisher. It was difficult to find other editor-publishers at the conference; in fact, I only met 1 Chinese editor-publisher of a physics journal at the editorial board meeting of Learned Publishing, the official journal of the ALPSP. This conference was originally a meeting of publishers, not editors. Most members whom I met were publishers who were employed by publishing companies.

The purpose of my visit to this conference was as follows: first, I planned to attend the editorial board meeting of Learned Publishing. I was invited to be an associate editor in 2015 by the editor, Pippa Smart. Second, I hoped to meet publishers and to interact with them to learn about their perspectives and activities in more detail; third, I intended to find out about recent innovations by publishers in order to catch up with recent progress in the scholarly publishing.

The Grand Hotel Huis ter Duin had a beachfront location on the Atlantic. On the first day, the first keynote address, “Sloppy science, selective reporting and the replication crisis,” was presented by Lex M Bouter of Brie University, Amsterdam. I remembered his speech from the plenary lecture he gave at the 13th European Association of Science Editors Conference held on June 10 to 12, 2016, in Strasbourg, France [1]. Because I had heard the content before, I was able to understand the presentation more thoroughly. He said that although sloppy science is not categorized as research misconduct, publishing scientifically flawed articles is a waste of journal space. Furthermore, it may cause bias in meta-analyses. He stressed that editors should be cautious about sloppy science and should prevent it. He suggested open access to ensure the
transparency of reports and open data policies to ensure the transparency of data. He also suggested the following approach to promote transparency: not to focus on the impact factor and citations, but to reward proper protocols, studies reporting negative data, data sharing, replication, dissemination, and application. Transparency can be achieved through nudging and forcing by the institutional review board, funders, and journals by reviewing study protocols at the first stage of research. If the study protocol is approved, the researchers can conduct the study and obtain the data. The journal can also review the study protocol as a first step, and then the data and interpretation can be submitted after data collection. Funders also can pay step by step. The feasibility of journals engaging in nudging and forcing via step-by-step procedures should be considered more carefully. In such a system, researchers would submit each study protocol to the institutional review board and to a journal. After receiving approval, they would conduct the research and submit the final data. Therefore, this system would involve 2-step submissions. I am not sure whether I would be able to adopt this system for my journal.

My journal was the first mover in Korea to adopt an open data policy, starting in March 2016 [2]. This policy was smoothly established, without any difficulties, thanks to the cooperation of authors [3]. An open data policy may be able to guarantee replicability. However, if the raw data themselves are falsified, it would be difficult to check the scientific validity of a study. Although no scientists are expected to provide falsified raw data, there was a report that pooled weighted average of 1.97% (n = 7; 95% confidence interval, 0.86 to 4.45) of scientists admitted to have fabricated, falsified or modified data or results at least once—a serious form of misconduct by any standard [4]. Other presentations and discussions are available from: https://www.alpsp.org/2017-Programme and YouTube (https://www.youtube.com/playlist?list=PLYB4k71cV1eXa2ddgXqIjiCi2MmX4Z39_) [cited January 30, 2018].

One of the most interesting topics was the Escalex project, by IFIS Publishing, which was 1 of the 7 finalists for the ALPSP Awards for Innovation in Publishing. This project provides food regulatory information from various countries. A variety of information technologies were utilized to build this system. The award in 2017 was presented to the Publons and Source Data projects from EMBO. Publons was founded in 2013, and is a pioneering global peer-review data and recognition platform. It was a breakthrough idea. The Source Data project provides dataset and metadata linking, data searching, and dissemination of data. Data have become more important year by year. EMBO’s approach to data was beautiful and intuitive.

As I listened to the speeches at the conference, I noticed that there were no presentations by publishers from Asia, as no Asian publishers were invited to present at the conference. This may have been because there are not many international publishing companies in Asia and because publishers from Asia could attend the ALPSP conference on an individual basis. I met a publisher from Profeza, India (http://profeza.com/) in the lobby. He explained their system for open data and laboratory data and how they were linked to in the articles. It was fantastic to see a direct and simple link from articles to data. It may be convenient for readers and researchers to read the article and check the data at the same time.

At lunch time on the second day, there was an editorial board meeting of Learned Publishing led by Pippa Smart, the editor of the journal. I made the following suggestions that have already been introduced at my journal: first, adopting an open data policy; second, Medline indexing; third, including a declaration of conflicts of interest; and fourth, requesting informed consent agreements for articles with human subjects. My suggestions were all discussed and accepted, and the follow-up work was started. I am especially interested in Medline indexing, which may provide more convenient searching and better visibility. I was very happy that my suggestions were accepted and processed after the board meeting. Other topics were also discussed, including Altmetrics and marketing. A new leaflet was introduced and the new name card of the journal was provided to the editorial board members. Although the board meeting took approximately an hour, the discussion was very active. It was particularly impressive that we were connected with board members who could not attend the conference via telephone or Internet. I could hear the voices of fellow board members through a speaker. I also hope to adopt this tele-meeting system for my journal’s editorial
Asian publishers compete with publishers in Europe and North America

I enjoyed talking with attendees in the lobby and dining room. I asked publishers whether they had adopted Journal Article Tag Suite (JATS) extensible markup language (XML) for full-text article XML. Staff members from both Springer and Wiley told me that they generally used their own XML for full-text articles, although they produced JATS XML for deposit to PubMed Central. In Korea, all academic societies have adopted JATS XML for full-text articles. Large international publishers may have their own systems for their unique databases. The wide range of pamphlets displayed in the lobby was another source of information (Fig. 1). Many publishers would like to raise awareness of their products or technologies by providing pamphlets. I collected many pamphlets and have frequently read them after returning home.

After dinner on the second day, there was a quiz hour. The attendees at each table formed a team, answering questions on science, music, novels, and other topics. After calculating the total score of each team, the winning team was selected. My team was the winner, so I also received a small prize. This was a pleasant form of entertainment, as attendees relaxed and cooperated with each other to find the answers.

It was hard for me to travel from East Asia to Europe. The time lag was 8 hours. However, I was able to enjoy the conference and to meet colleagues. Furthermore, after the conference I visited Leiden University and enjoyed the beautiful botanical museum there. Before returning to Korea, I attended the season opening opera concert in Amsterdam. Enjoying the culture while attending a conference abroad was another source of joy.

What lessons can Asian editors, including myself, learn from attending the ALPSP conference? First, Asian editors should strive to promote Asia-based international publishing companies to the international level so that they can be competitive with Europe or North America-based international publishing companies. Most scholarly journals from Asia are published by academic societies or non-profit organizations or institutes; therefore, they have no stable income model. Publishers have provided the cost of publication. I suggest establishing a non-profit cooperative of a number of academic societies jointly with printing, manuscript editing, engineering, English proofreading, and illustration companies. Therefore, the cooperative can train professionals in editing and publishing. Second, associations of science editors in Asia, such as the Council of Asian Science Editors, should play the role of information providers to Asian editors by delivering journals and newsletters and conducting regular meetings for training. The journal market has evolved rapidly in recent years, so we, as Asian editors, should catch up with this pace of development as soon as possible.

**Conflict of Interest**

No potential conflict of interest relevant to this article was reported.

**References**

Eighth International Congress on Peer Review and Scientific Publication

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The Peer Review Congress was first held in Chicago in September 1989, and has been held every 4 years since. This year's venue was also Chicago; the congress is usually held in Chicago because it is the location of the American Medical Association, which supervises the meeting. This year's congress was co-hosted by the JAMA, The BMJ, and the Meta Research Innovation Center at Stanford, and the theme was "Enhancing the quality and credibility of science." Forty-five plenary session reports, 84 poster session reports, and 5 invited talks related to the theme were presented over the course of 3 days.

The plenary reports were distributed among 12 sessions, with 2 morning sessions and 2 afternoon sessions on each of the 3 days of the meeting. The moderator of each session introduced the presenters, and time for questions and answers was allocated after each presentation. The topics for each session were as follows: bias associated with conflict of interest and peer review, bias in reporting and publication of research, integrity and misconduct, data sharing, quality of reporting, quality of the scientific literature, trial registration, funding/grant review, peer review innovations, editorial and peer-review process innovations, prepublication and postpublication issues, and postpublication issues.

Each session's title corresponded to the topics of the 3 or 4 plenary reports that it included, and each participant received a copy of the program book with abstracts. All abstracts are freely available and can be downloaded from the conference website (https://peerreviewcongress.org/program-information).

The title of the highly anticipated first session was "Bias associated with conflict of interests and peer review." Topics such as conflicts of interest, the gender of reviewers, and financial influences on the results of systematic reviews were covered in the session. One of the reports conducted a sampling of 1,650 papers indexed in Medline in 2016 to determine whether they had properly reported conflicts of interest according to the recommendations of the International Committee of Medical Journal Editors, and it turned out that only 1 out of 5 papers had properly followed those recommendations. It was also found that 130 unsystematized phrases were used for disclosure, which underscores the need for a new method to verify more easily whether the recommendations have been implemented. Another report researched 128,454 papers reviewed by Nature; the author separated the papers into single-blind and double-blind studies, and investigated the gender of the corresponding authors, the ratio of countries, and the acceptance status. Yet another report looked into the gender of reviewers in 20 journals in...
the field of earth and environmental sciences, which annually reviewed 24,000 papers and published 6,000 of them. The percentage of female lead authors, corresponding authors, and editors was investigated, and it was concluded that females participated less than males. The focus on these issues was novel.

In the "Bias in reporting and publication of research" session, I encountered the term "spin." "Spin" is synonymous with "overinterpretation," and it refers to the misinterpretation of data in literature-based papers such as systematic reviews. Systematic reviews play an important role in developing guidelines and policies based on the available evidence, and if either the data or the interpretation is flawed, the resultant recommendation is likely to have a negative impact on patients. One of the reports indicated that spin was commonly found in the abstracts, results, and conclusions of clinical research studies evaluating the efficacy of biological markers of ovarian cancer. It follows that a strategy is needed to control spin and check the influence of exaggerated reports. In the report, "Bias associated with publication of interim results of randomized trials: a systematic review," papers that were published over the course of 10 years with terms such as 'interim,' 'not mature,' and 'immature' in their titles or abstracts were researched. One of the study's suggestions to reduce bias was to publish only the final results and to refrain from publishing interim results before completing the research.

Especially interesting to me was the session on “Integrity and misconduct.” One of the reports investigated cases where the subject papers of a meta-analysis or systematic review were retracted after the meta-analysis was published. The retracted papers should not have been included, and could have affected the results of the meta-analysis or systematic review. The author found 3,834 retracted papers on Web of Science, and investigated the meta-analyses or systematic reviews that cited those papers. It turned out that 17 meta-analyses included retracted papers in their analyses, and the author remarked that he was planning to conduct a follow-up study on how the exclusion of retracted papers would influence the effect. Additionally, the American Physiological Society presented on their quality control efforts in terms of the digital images in papers, and described how they edit out unclear or improper images during the editing process. They evaluated the images of photographs, western blots, and DNA/RNA gels in papers published from 2009 to 2016, and emphasized that their quality control processes aimed at integrity effectively decreased the number of corrigenda.

In the “Data sharing” session, there was a report on authors’ intentions and experiences regarding data sharing. The report analyzed 3 journals; PLOS Medicine required all the authors who submitted papers reporting clinical research to share their data, while The BMJ and Annals of Internal Medicine had a policy requiring the authors to state whether they were willing to share the data. When authors affirmed their willingness to share, The BMJ and Annals of Internal Medicine contacted the authors 1 year after the papers’ publication and inquired about their plan for sharing, their receipt of sharing requests, and their efforts to respond to those requests. It was found that when authors received a request indicating that the requester intended to publish a similar analysis, the authors’ willingness to share inevitably decreased.

As expected from the name of the Peer Review Congress, various issues were discussed regarding peer review. In the “Peer review innovation” session, a report researched 1 year of papers submitted to the journals published by the Institute of Physics, and surveyed the authors’ satisfaction and opinions regarding double-blind peer review. The survey also explored differences among various scientific fields, which made me wonder whether expanding this idea could lead to the adoption of more efficient or more preferable methods in each field. Although double-blind peer review has been hitherto the default form, the report’s research into open review and investigation into which peer review form (double-blind, single-blind, or open review) would most increase the likelihood of reviewers agreeing to review a paper hinted at the increasing interest in and necessity of the open review form. Another report was about an educational blog for emergency medicine, ‘ALiEM,’ which peer-reviews its posts. On the assumption that each post’s peer review status and its text arrangement would affect the usage patterns, the report analyzed usage patterns, such as blog visitors’ post reading time and the bounce rate through Google Analytics. Although the results
were not statistically meaningful, its approach to the open peer review process and content presentation was quite novel.

Lunch at the Peer Review Congress was not a buffet, enabling the participants at each table to have casual conversations with other participants. Although 1 hour was allotted to the poster sessions in the afternoon, the poster room was just in front of the dining hall and people could look around in the meantime. People were more interested in the posters than at any other conference that I have attended in the past (Fig. 1). A total of 84 posters were displayed over the course of 2 days, and the sheer number of them made it hard to take a close look or to have an in-depth conversation with the poster presenters, despite the separate time that was provided for viewing them. On September 12, I presented a poster entitled “Post-retraction citations in Korean medical journals.” The poster was a summary of a paper that I had co-authored with Sun Huh, Soo Young Kim, and Hye-Min Cho. Many people stopped by to express their interest in it, most notably participants from the National Library of Medicine. Small A4-size hard copies were not prepared, yet many participants asked for the content through email later and expressed their interest in the topic. Their strong interest was probably because no other posters at this year’s Peer Review Congress dealt with retraction; I could see that many participants were taking the issue of retraction seriously (Fig. 2).

The conference had exceptionally diverse topics and presentations. It was easy to recognize the necessity and purpose of all these presentations, but it was astonishing how the presenters managed to think of such a range of viewpoints. This underscored to me, once again, that they were ahead of us in the field of academic publishing. Above all, the size of the conference, which more than 500 people attended, was surprising. Participants were asked to indicate whether they had attended the previous 7 conferences, and it turned out that many people were first-time participants. Four people, including myself, attended from Korea; it was delightful to see Prof. Sung-Tae Hong (Seoul National University College of Medicine, editor-in-chief of Journal of Korean Medical Science), Prof. Se-Jeong Oh (The Catholic University of Korea College of Medicine, former editor-in-chief of Journal of Breast Cancer), and Prof. Pan Dong Ryu (Seoul National University College of Medicine, editor-in-chief of Journal of Veterinary Science) at the conference.

Many presenters at the plenary report sessions were professors, but there were also many editors from publishing companies and some relatively young graduate students. Every presentation was directly followed by a question-and-answer session; whereas only a few questions are usually asked at Korean conferences, at the Peer Review Congress, you could frequently see many participants lining up behind microphones to ask questions. It was novel to see so many people at each presentation freely asking questions and expressing their ideas in a very forthright and natural atmosphere.

In the closing session, a slideshow was played in dedication to Mr. Drummond Rennie, the chair of the Peer Review Congress, who has worked for decades in the service of JAMA. All the participants stood up to express their gratitude for his hard work, which made me see again that an editor’s service and devotion are essential for an academic journal’s development. With the belief that all these efforts lead to the further development of academic publishing, I resolve to pay continuous attention to issues related to peer review and academic publishing in the future.

Conflict of Interest

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The Public Knowledge Project (PKP) is a research and development initiative of Simon Fraser University (SFU) and Stanford University, with a focus on understanding and building enhanced modes of scholarly communication that facilitate open access, high-quality publishing, and local capacity building and participation [1]. The PKP has developed a series of free, open source software, such as Open Journal Systems (OJS), Open Monograph Press, Open Conference Systems, and Open Harvester Systems. The PKP has held biennial conferences since 2007 to provide an open forum to PKP community members and anyone interested in scholarly publishing.

The 6th PKP International Scholarly Publishing Conference was held at Université de Montréal, Quebec on August 2 to 4, 2017. The theme of this year’s conference was “Reclaiming scholarship: voice, rights, ownership.” The conference program consisted of 3 parts: technical sessions including PKP Sprints and the PKP Workshop; a 2-day symposium including invited speakers, lightning talks, and panel presentations; and social meet-ups for networking.

The first day of the conference commenced with the PKP Sprints. PKP Sprints are short-term and ad-hoc events in which a group of programmers, editors, librarians, users, and others gather together once or twice a year to identify tasks, make priorities, and find solutions. A 2-day development sprint took place in conjunction with the PKP conference this year. Various tasks were discussed, with topics including “New user mediation,” “Open typesetting stack,” “Documentation update and architecture,” “Upgrading OJS XML import/export,” “Internal statistics,” “Book sprint,” “REST API,” and “Making metadata fields required.” Most suggestions and issues were recorded by the group leader, and on- and off-line communication was parallelized by utilizing Slack—a real-time communication and file exchange application for teams—during the brainstorming.

I joined the “Open typesetting stack” group to enhance my understanding and to help improve the user experience in languages other than English. The group was led by Alex Garnett, a Digital Preservation and Data Curation specialist at Simon Fraser University and one of the PKP staff members. The Open Typesetting Stack (OTS) refers to a standalone service for converting Microsoft word and PDF documents to structured National Library of Medicine Journal Article Tag Suite (JATS) XML and creating HTML, PDF, and ePub article views from the XML. We installed a beta version of the service and reviewed the design, the functions, and the workflow of the OTS plugin for OJS 3. The OTS Sprint leader assessed the discussion as being
The second day of the conference featured a double track of the continuing Sprints and the PKP Workshop. The workshop was designed (1) to provide an overview of the current and upcoming characteristics of OJS 3, (2) to discuss what works well and what might be missing in the new release, and (3) to review the major considerations related to the decision of migrating from OJS 2 to OJS 3 and the necessary steps to complete the migration. Other questions and comments on working with OJS were freely discussed during the workshop.

In the afternoon, a single track of invited speakers, lightning talks, and a panel presentation followed the official welcome from Université de Montréal and Simon Fraser University. The opening address was made by John Willinsky, a professor at Stanford University and the founder and director of the PKP (Fig. 1). He addressed license and copyright issues, which were thrown into sharp focus. He traced the history of how publishers were successful in legitimizing and protecting their commercial interests against those of academic freedom. From the beginning of the PKP in 1997, the PKP team discussed the freedom to read and to write, even when the term ‘open access’ had not yet been coined. He identified 3 tipping points for moving from the subscription model to open access and exhorted us to identify where we were on the open access quest. First, half of the recent literature is available online to researchers. The second point is that Elsevier has announced that they are the second largest open access publisher. Third, 5 publishers are now in possession of close to 50% of the published literature. He criticized the pervasiveness of commercial publishing models (including article processing charges to fund open access), the use of closed third-party systems and software, and the corporate concentration of scholarly publishing services. The power of community-based approaches in scholarly communication should be emphasized. He also drew our attention to students, who are novel players in scholarly publishing, at the conclusion of his address. His assertion that sharing research ideas and output through publication should not be limited to specific levels of academia, but should be open to anyone who is willing, at first seemed challenging given the fact that scholarly publishing is only led by academic societies and several research centers in South Korea. Throughout the speaker series over the last 2 days of the conference, more than 7 talks described publishing student journals or undergraduate journals supported by OJS and university libraries (Fig. 2). OJS as a platform for non-traditional scholarly output and open access publishing was discussed, and various use cases and experiences with it were shared. More on the technical issues and features of OJS and the results of the PKP Sprints were presented and discussed. In addition, viewpoints from the global South, including South Africa, Latin America and the cross-continental project SciELO, were addressed. Issues regarding the sustainability and collaboration of non-commercial open access in Latin America are critical, as they are in Korea. Ina Smith from the Academy of Science of South Africa presented a summary of the rise of scholarly publishing in South Africa.

The conference provided attendees with valuable opportu-
nities for networking. The PKP Sprints were group activities. The group members gathered together according to their own research interests and mingled with each other even after the group activity had concluded in order to have in-depth discussions. The Library Publishing Coalition meetup on August 3 provided an opportunity for attendees to learn about the Library Publishing Coalition, a community of academic libraries supporting a range of scholarly publishing practices. During the conference reception and Montreal dinner, attendees appreciated the French culture in Montreal and socialized before heading home.

By attending the PKP 2017 International Scholarly Publishing Conference, I had the opportunity to meet the global open access leader John Willinsky face-to-face. His speech on the copyright of the academic publications and the ownership of intellectual property from a historical perspective gave me much insight on scholarly publishing. Thoughtful opinions and comments were shared throughout the symposium, and even during the breaks and the casual social meet-ups. The government, societies, researchers, and publishers in Korea should meet and form a consensus regarding our open access quest in scholarly publishing.

As a systems developer and a community services manager, I became more informed about the workflow and the functions of the publishing platform used internationally through the technical session. The way that conference attendees interacted with each other using open web tools such as Slack and Google Drive in real time was quite impressive as well. This communication method seems efficient for eliciting hidden questions and opinions from all attendees, because offline meetings often tend to be led by just a few people.

The next conference will be held in 2 years in Canada. I hope that more researchers, editors, publishers, and librarians in Korea attend the next PKP conference and enjoy the opportunity to communicate with attendees who have common interests.

Conflict of Interest

No potential conflict of interest relevant to this article was reported.

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Reference

Crossref LIVE17 annual meeting in Singapore

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The Crossref LIVE17 annual meeting took place at the Fort Canning Hotel in Singapore on November 14 to 15, 2017. The meeting was held in Asia for the first time, considering the region’s rapidly growing membership, breaking away from the tradition of being hosted in Boston and London in alternate years. LIVE17 provided a fantastic opportunity for Asian members who had recently begun to take interest and to participate in content-linking services using digital object identifiers (DOIs) to ask questions and exchange opinions with the staff and other attendees in person.

The meeting was attended by around 250 publishers, editors, librarians, researchers, funders, tool-makers, and members, and the attendees exchanged their views on the relationships of metadata with research outputs and the scholarly community. The theme for this year’s meeting was “metadata+infrastructure+relations = context,” with the following key discussion topics for each section: who is using metadata and what are they doing with it; how research and infrastructure are changing; metadata enables connections; and contextual challenges in scholarly communications.

The first day of the meeting started with Executive Director Ed Pentz’s lecture, entitled “Year in review and strategy introduction.” This session presented a brief introduction to the organization, including its role, mission, and accomplishments in 2017, as well as projects carried out in cooperation with other organizations and new services to be launched in 2018. The following content was covered: the 2017 board member elections; a series of live events; projects with other organizations (Metadata 2020 initiative and the second PIDapalooza meeting); services for new types of content (preprints); statistics on Crossref DOI; statistics on the Cited-by service; setting up a working group for organization identifiers with DataCite, ORCID, and other organizations; restarting the funder advisory group; improving existing services (Metadata Manager, Similarity Check, and Crossmark); building new services (Participation Reports and Event Data); best practices and policies (updated Crossref DOI display guidelines and new reference policy). The first session provided an excellent overview of all the sessions to be delivered within the next two days, and was extremely helpful for planning which sessions to attend.

The lecture was followed by parallel sessions given by the Crossref staff. Four presentations were delivered, including: “How to win at being a Crossref member,” “Reaching our international community,” “Relations, translations, and versions,” and “This Metadata Manager will change your life.” Of these sessions, I attended “Reaching our international community,” pre-
sent by Rachael Lammey and Vanessa Fairhurst. Exchanges and collaborations among the member community are the key to Crossref’s operation, since it is a membership-based organization. It also dedicates considerable resources to providing members with education and organizational training. For instance, webinars are available on diverse topics ranging from basic concepts to training on each specific service, some of which are even offered in local languages. Moreover, responding to the recent dramatic increase in new members from Eastern European countries such as Russia and Turkey and Asian countries such as South Korea, Indonesia, China, and Japan, the organization has held local live events in those areas to support education and the exchange of ideas among local members. Moreover, a community ambassador program will begin in 2018 with the goals of raising awareness of certain audiences or countries, promoting outbound education to both existing members and new audiences, and improving communication with and between non-English speaking communities. The roles and responsibilities of ambassadors will span from regular check-ins, staying up to speed, and creating blog posts to helping with local live events, translating, running webinars, member training, participating in beta-testing, representing Crossref at select pre-agreed conferences, and engagement in community forums.

The afternoon parallel sessions consisted of “ARIA: a scholarly metrics information system for universities,” “I4OC: the initiative for open citations,” “What does data science tell us about social challenges in scholarly publishing,” and “Exploring relationships with Event Data.” I attended the “Exploring relationships with Event Data” session presented by Madeleine Watson of Crossref, and found it very interesting. Discussions on scholarly research frequently occur outside of the publisher’s platform on blogs, sharing services, social media, and other similar resources, and Event Data is a service that plans to provide a raw data record of these activities. The service is under development in tandem with DataCite, and will allocate DOIs for content collected from web services such as Twitter, Facebook, Wikipedia, ResearchBlogging, and Reddit, showing when the content was saved, shared, liked, referenced, or commented on. Since the data will be collected in the raw format, publishers and publisher platforms, journal editors, Altmetrics and other service providers, funders, bibliometricians, and the research community will be able to process the data according to their goals. The beta version is now available on the Crossref website, and I cannot wait to try it out.

At the plenary sessions, I was intrigued by John Chodacki from the California Digital Library, who gave a lecture on “Metadata 2020: what could richer metadata enable?” Metadata 2020 is an initiative that is focused on helping publishers and other content providers and brokers not just to create deposits, but also to think more about the actual quality of the metadata that they are depositing. It is a collaboration across multiple communities such as publishers, funder organizations, service providers, librarians, and researchers. Its goal is to focus on three main areas to create richer, connected, and reusable metadata. In this initiative, each discussion group defines the characteristics of metadata and issues in depositing and using metadata, then develops best practices to resolve the issues.

My favorite morning session on the second day was a smaller interactive session where participants gathered into small groups and had a free discussion about topics of their own choice. Three main sample topics were suggested: “Bring your ethics issues to discuss with COPE,” “Your Similarity Check questions answered,” and “Use Crossmark to convey evidence of trust.” However, each group could select any topic of its members’ common interest and have an in-depth discussion. I joined the “Use Crossmark to convey evidence of trust” group led by Jennifer Lin, in which participants asked questions about the Crossmark service and made suggestions for improvements. I was also able to beta-test the new “Participation Reports for Publishers” service scheduled to be launched in 2018, with Vanessa Fairhurst, a Crossref staff member. Participation Reports will be provided on the ‘Dashboard,’ where publishers can see what metadata they are depositing and what metadata could be deposited to take advantage of this possibility and submit this richer metadata to Crossref. I suggested opinions on the screen design, user interface, menu, and improvements. I will be curious to see how many of my suggestions will be reflected in the final version and to hear members’ opinions about this service.

My favorite session in the afternoon was “The OI Project: disambiguating affiliation names” by Paul Peter of Hindawi, who is a working group member of the OI Project. OI means organization identifier. He introduced the ongoing OI Project. At the moment, Crossref can only collect institutional information from authors in free text format. This introduces errors and inconsistencies, making it hard to comprehensively track research output from different universities. To this end, Crossref is developing an identifier for the affiliations of organizations and researchers in cooperation with ORCID and DataCite that would be similar to DOI as an identifier for articles or ORCID for researchers. I believe it would be useful for researchers to describe their affiliations and to match organizations with articles they produced, and this would be facilitated by organizations and departments having their own standard identifiers. I enthusiastically look forward to the launch of this service.

One of the things I found most impressive in this annual
meeting was the versatile and open arrangement of the conference space. Unlike the typical arrangement of rows of tables and chairs at conference or workshop settings, many different types of arrangements were used, ranging from formal round tables, casual tea tables, couches, and bean bag chairs with the Crossref logo, contributing to the comfortable and open atmosphere. In addition to these unique seating arrangements, I was also inspired by the friendly attitudes of the on-site staff. Around 15 staff members wearing black Crossref T-shirts were easily visible and accessible throughout the conference hall, making participants feel comfortable to ask for assistance whenever needed (Fig. 1).

Next year's annual meeting is scheduled to be held on November 13 to 14 in Toronto, Canada. I am already looking forward to the many new services the meeting will bring about. I hope more people will attend next year to learn about the latest trends in the academic publishing field and to make full use of the opportunity to network within the community.

Conflict of Interest

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DOAJ Ambassador Training Course in Seoul

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From October 31 to November 3, 2017, the National Library of Korea in Seoul hosted the Directory of Open Access Journals (DOAJ) Ambassador Training Course. Three DOAJ staff members from the Netherlands, China, and India conducted the event. Their main purpose was to train the participants, who were Korean journal editors or manuscript editors, on what DOAJ does and how to apply for their open access journals to be included in the directory. The instructors were also to elect three DOAJ Korean ambassadors from among the trainees. The ambassadors would promote DOAJ in Korea and help publishers apply for their journals’ inclusion in the DOAJ. The instructors would elect the ambassadors based on their performance during the training course and an individual interview conducted on the last day of the training.

On the first day of the program, I arrived at the training with excitement and expectation. After a brief introduction, the instructors explained the details of the training program. Then we all learned about and discussed DOAJ, journal publishing, open access, and trends in the Korean publishing market. After the day session, participants had an opportunity to connect with each other over dinner. Everyone seemed to be excited about the remaining sessions.

On the second day, the instructors explained the organizational and administrative structure of DOAJ. Then participants practiced filling in the Journal Application Form, item by item. In the afternoon, participants gathered into groups to practice reviewing and evaluating application forms. Then the groups presented their conclusions of the review and asked questions about the review process. It appeared that most participants had not yet applied for their journal’s inclusion in DOAJ and that the practice session had been helpful. A few participants promised to apply after the training.

On the third day, each participant used the knowledge gained from the previous day’s practice to evaluate an example application form. Compared to the group exercise from the day before, this individual evaluation was more exciting but also carried the weight of greater responsibility. After the exercise, the instructors shared DOAJ’s expectations for Korean ambassadors. They also discussed the practices of the DOAJ ambassadors in Indonesia and the recent increase in journal applications from that country. In the last session of the day, participants who wanted to become a DOAJ Korean ambassador scheduled interviews for the next day.

Finally, on the last day, the instructors conducted the ambassador interviews and announced the three new Korean ambassadors. The other participants expressed their willingness to help

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DOAJ as volunteers. All participants were granted a certificate of training completion. They were proud of their accomplishment, which they celebrated with a small party. Fig. 1. is a group photo of all the participants from the first day of the event, and Fig. 2. shows the instructors and the newly appointed Korean ambassadors.

The instructors were happy that they achieved the goals of their visit: promoting DOAJ in Korea, teaching how to complete and review the Journal Application Form, and appointing Korean ambassadors. The participants were grateful to have learned more about DOAJ and promised to dedicate themselves to promoting DOAJ in Korea.

Personally, I felt a sense of burden from the responsibilities I will take on as a DOAJ ambassador. However, I am more than ready to work hard for my country in cooperation with my fellow ambassadors, DOAJ staff, and the many DOAJ volunteers around the world. With their help, I hope to raise Korea’s global standing in the field of open access.

**Conflict of Interest**

No potential conflict of interest relevant to this article was reported.
A party to celebrate having an article published

Beom Sun Chung, Min Suk Chung
Department of Anatomy, Ajou University School of Medicine, Suwon, Korea

No matter what the activity, the harder it is, the happier we are afterwards. The process of writing a scientific article is so agonizing that the parties to celebrate its publication should be correspondingly fun. For me, the most joyful parties are those thrown to celebrate my students being hired. My students and I have suffered for a long time together, so those parties are very cheerful and tend to last all night.
Newspaper article is unlike scientific article. A newspaper article that doesn't reveal its source might seem irresponsible, like a work of fiction; however, the truly irresponsible newspaper article is one that does disclose its source. When you tell your friends a juicy piece of gossip, some may ask about the source. If you tell them where the gossip came from, you are being irresponsible. People who disclose their source are not even qualified to gossip.

Graduate students are often confused about equivalent elements. For example, their articles contain sentences like this: “The results of this study are different from other studies.” Results and studies are not equivalent. The results are just a part of the study. Instead, they should write sentences like this: “The results of this study are different from those of other studies.”
The Chinese word for “research article” can be interpreted as meaning “logical writing.” Logical writing can be summarized into tables. Therefore, tables should be made before writing, even if they are not included in the final article. However, many graduate students do not know how to make tables that logically show their experiences and thoughts. They should be trained to make well-organized tables.

Scientists know how tedious proofreading is. It is an endless job. However, they also know that it should be done thoroughly because published articles are unalterable. Articles are not mere documents, but permanent records. In other words, the articles outlive the authors.

Conflict of Interest

No potential conflict of interest relevant to this article was reported.

Acknowledgments

This research was financially supported by the Ministry of Trade, Industry and Energy (MOTIE) and Korea Institute for Advancement of Technology (KIAT) through the International Cooperative R&D program (grant no. N0002249).
Events in 2018

The Korean Council of Science Editors announces the schedule of the events in 2018. Precise schedule and registration of the workshops were or will be available from: https://www.kcse.org.

Table 1. Schedule of the events by the Korean Council of Science Editors in 2018

<table>
<thead>
<tr>
<th></th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science Editing (twice a year)</td>
<td>Vol.5 No.1 (20)</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Newsletter (4 times a year)</td>
<td>No. 25 (31)</td>
<td></td>
<td></td>
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<td>No. 26 (30)</td>
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<tr>
<td>Editors’ Workshop</td>
<td>2018 Preconference Workshop (18, 19)</td>
<td>Editors’ Workshop (13)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Manuscript Editors’ Training &amp; Workshop</td>
<td>Basic Manuscript Editing (28)</td>
<td>Basic Manuscript Editing (9, 14, 22, 28)</td>
<td>Basic Manuscript Editing (5, 11, 18)</td>
<td>Advanced Manuscript Editing (3, 10, 17, 24, 31)</td>
<td>Advanced Manuscript Editing (7)</td>
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<tr>
<td>Publication Ethics Workshop</td>
<td></td>
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<td></td>
<td>Publication Ethics Workshop (30)</td>
</tr>
<tr>
<td>July</td>
<td></td>
<td>September</td>
<td>October</td>
<td>November</td>
<td>December</td>
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</tr>
<tr>
<td>Science Editing (twice a year)</td>
<td>Vol.5 No.2 (20)</td>
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</tr>
<tr>
<td>Newsletter (4 times a year)</td>
<td>No. 27 (30)</td>
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<td></td>
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<td>No. 28 (31)</td>
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<tr>
<td>Editors’ Workshop</td>
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<td></td>
<td>Editors’ Workshop (30)</td>
<td></td>
</tr>
<tr>
<td>Manuscript Editors’ Training &amp; Workshop</td>
<td>Manuscript Editor’s Certificate Workshop (13-14)</td>
<td></td>
<td></td>
<td>Examination for Korea Manuscript Editors Certification (17)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Publication Ethics Workshop</td>
<td></td>
<td>Publication Ethics Workshop (24)</td>
<td></td>
<td></td>
<td>Publication Ethics Workshop (29)</td>
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</tr>
</tbody>
</table>
1. GENERAL INFORMATION

*Science Editing* (Sci Ed) is the official journal of the Korean Council of Science Editors (KCSE). Anyone who would like to submit a manuscript is advised to carefully read the aims and scope section of this journal. Manuscripts should be prepared for submission to *Science Editing* according to the following instructions. For issues not addressed in these instructions, the author is referred to the International Committee of Medical Journal Editors (ICMJE) “Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals” (http://www.icmje.org).

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The journal adheres to the ethical guidelines for research and publication described in Guidelines on Good Publication (http://publicationethics.org/resources/guidelines) and the ICMJE Guidelines (http://www.icmje.org).

1. Authorship

Authorship credit should be based on 1) substantial contributions to conception and design, acquisition of data, and/or analysis and interpretation of data; 2) drafting the article or revising it critically for important intellectual content; 3) final approval of the version to be published; and 4) agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. Every author should meet all of these four conditions. After the initial submission of a manuscript, any changes whatsoever in authorship (adding author(s), deleting author(s), or re-arranging the order of authors) must be explained by a letter to the editor from the authors concerned. This letter must be signed by all authors of the paper. Copyright assignment must also be completed by every author.

• Corresponding author and first author: *Science Editing* does not allow multiple corresponding authors for one article. Only one author should correspond with the editorial office and readers for one article. *Science Editing* does accept notice of equal contribution for the first author when the study was clearly performed by co-first authors.

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2. Originality, plagiarism and duplicate publication

Submitted manuscripts must not have been previously published or be under consideration for publication elsewhere. No part of the accepted manuscript should be duplicated in any other scientific journal without the permission of the Editorial Board. Submitted manuscripts are screened for possible plagiarism or duplicate publication by CrossCheck upon arrival. If plagiarism or duplicate publication related to the papers of this journal is detected, the manuscripts may be rejected, the authors will be announced in the journal, and their institutions will be informed. There will also be penalties for the authors.

A letter of permission is required for any and all material that has been published previously. It is the responsibility of the author to request permission from the publisher for any material that is being reproduced. This requirement applies to text, figures, and tables.

3. Secondary Publication

It is possible to republish manuscripts if the manuscripts satisfy the conditions of secondary publication of the ICMJE Recommendations (http://www.icmje.org/urm_main.html).
4. Conflict of interest statement
The corresponding author must inform the editor of any potential conflicts of interest that could influence the authors’ interpretation of the data. Examples of potential conflicts of interest are financial support from or connections to companies, political pressure from interest groups, and academically related issues. In particular, all sources of funding applicable to the study should be explicitly stated.

5. Statement of human and animal right
Clinical research should be done in accordance of the Ethical Principles for Medical Research Involving Human Subjects, outlined in the Helsinki Declaration of 1975 (revised 2008), available from: http://www.wma.net/en/30publications/10policies/b3/. Clinical studies that do not meet the Helsinki Declaration will not be considered for publication. Human subjects should not be identifiable, such that patients’ names, initials, hospital numbers, dates of birth, or other protected healthcare information should not be disclosed. For animal subjects, research should be performed based on the National or Institutional Guide for the Care and Use of Laboratory Animals, and the ethical treatment of all experimental animals should be maintained.

Copies of written informed consent documents should be kept for studies on human subjects. For clinical studies of human subjects, a certificate, agreement, or approval by the Institutional Review Board (IRB) of the author’s institution is required. If necessary, the editor or reviewers may request copies of these documents to resolve questions about IRB approval and study conduct.

7. Process for Managing Research and Publication Misconduct
When the journal faces suspected cases of research and publication misconduct such as redundant (duplicate) publication, plagiarism, fraudulent or fabricated data, changes in authorship, an undisclosed conflict of interest, ethical problems with a submitted manuscript, a reviewer who has appropriated an author’s idea or data, complaints against editors, and so on, the resolution process will follow the flowchart provided by the Committee on Publication Ethics (http://publicationethics.org/resources/flowcharts). The discussion and decision on the suspected cases are carried out by the Editorial Board.

8. Process for handling cases requiring corrections, retractions, and editorial expressions of concern
Cases that require editorial expressions of concern or retraction shall follow the COPE flowcharts available from: http://publicationethics.org/resources/flowcharts. If correction needs, it will follow the ICMJE Recommendation for Corrections, Retractions, Reproductions and Version Control available from: http://www.icmje.org/recommendations/browse/publishing-and-editorial-issues/corrections-and-version-control.html as follows:

Honest errors are a part of science and publishing and require publication of a correction when they are detected. Corrections are needed for errors of fact. Minimum standards are as follows: First, it shall publish a correction notice as soon as possible detailing changes from and citing the original publication on both an electronic and numbered print page that is included in an electronic or a print Table of Contents to ensure proper indexing; Second, it shall post a new article version with details of the changes from the original version and the date(s) on which the changes were made through CrossRef; Third, it shall archive all prior versions of the article. This archive can be either directly accessible to readers; and Fourth, previous electronic versions shall prominently note that there are more recent versions of the article via CrossRef.

9. Editorial Responsibilities
The Editorial Board will continuously work to monitor and safeguard publication ethics: guidelines for retracting articles; maintenance of the integrity of the academic record; prevention of business needs from compromising intellectual and ethical standards; publishing corrections, clarifications, retractions, and apologies when needed; and excluding plagiarism and fraudulent data. The editors maintain the following responsibilities: responsibility and authority to reject and accept articles; avoiding any conflict of interest with respect to articles they reject or accept; promoting publication of corrections or retractions when errors are found; and preservation of the anonymity of reviewers.

4. AUTHOR QUALIFICATIONS AND LANGUAGE REQUIREMENT

1. Author Qualifications
Any researcher throughout the world can submit a manuscript if the scope of the manuscript is appropriate.

2. Language
Manuscripts should be submitted in good scientific English.

5. SUBMISSION AND PEER REVIEW PROCESS

1. Submission
All manuscripts should be submitted to kcse@kcse.org by the corresponding author.
2. Peer Review Process

Science Editing reviews all manuscripts received. A manuscript is first reviewed for its format and adherence to the aims and scope of the journal. If the manuscript meets these two criteria, it is dispatched to three investigators in the field with relevant knowledge. Assuming the manuscript is sent to reviewers, Science Editing waits to receive opinions from at least two reviewers. In addition, if deemed necessary, a review of statistics may be requested. The authors’ names and affiliations are removed during peer review. The acceptance criteria for all papers are based on the quality and originality of the research and its scientific significance. Acceptance of the manuscript is decided based on the critiques and recommended decision of the reviewers. An initial decision will normally be made within 4 weeks of receipt of a manuscript, and the reviewers’ comments are sent to the corresponding author by e-mail. The corresponding author must indicate the alterations that have been made in response to the reviewers’ comments item by item. Failure to resubmit the revised manuscript within 4 weeks of the editorial decision is regarded as a withdrawal. A final decision on acceptance/rejection for publication is forwarded to the corresponding author from the editor.

3. Peer review process for handling submissions from editors, employees, or members of the editorial board

All manuscripts from editors, employees, or members of the editorial board are processed same to other unsolicited manuscripts. During the review process, submitters will not engage in the decision process. Editors will not handle their own manuscripts although they are commissioned ones.

6. MANUSCRIPT PREPARATION

1. General Requirements

- The main document with manuscript text and tables should be prepared in an MS Word (docx) or RTF file format.
- The manuscript should be double spaced on 21.6 x 27.9 cm (letter size) or 21.0 x 29.7 cm (A4) paper with 3.0 cm margins at the top, bottom, right, and left margin.
- All manuscript pages are to be numbered at the bottom consecutively, beginning with the abstract as page 1. Neither the author’s names nor their affiliations should appear on the manuscript pages.
- The authors should express all measurements according to International System (SI) units with some exceptions such as seconds, mmHg, or °C.
- Only standard abbreviations should be used. Abbreviations should be avoided in the title of the manuscript. Abbreviations should be spelled out when first used in the text—for example, extensible markup language (XML)—and the use of abbreviations should be kept to a minimum.
- The names and locations (city, state, and country only) of manufacturers should be given.
- When quoting from other sources, a reference number should be cited after the author’s name or at the end of the quotation.

Manuscript preparation is different according to the publication type, including original articles, reviews, case studies, essays, editorials, book reviews, and correspondence. Other types are also negotiable with the Editorial Board.

2. Original Articles

Original articles are reports of basic investigations. Although there is no limitation on the length of the manuscripts, the Editorial Board may abridge excessive illustrations and large tables. The manuscript for an original article should be organized in the following sequence: title page, abstract and keywords, main text (introduction, methods, results, and discussion), acknowledgments, references, tables, figure legends, and figures. The figures should be received as separate files. Maximum length: 2,500 words of text (not including the abstract, tables, figures, and references) with no more than a total of 10 tables and/or figures.

- **Title page:** The following items should be included on the title page: 1) the title of the manuscript, 2) author list, 3) each author’s affiliation, 4) the name and e-mail address of the corresponding author, 5) when applicable, the source of any research funding and a list of where and when the study has been presented in part elsewhere, and 6) a running title of fewer than 50 characters.
- **Abstract and Keywords:** The abstract should be one concise paragraph of less than 250 words in an unstructured format. Abbreviations or references are not allowed in the abstract. Up to 5 keywords should be listed at the bottom of the abstract to be used as index terms.
- **Introduction:** The purpose of the investigation, including relevant background information, should be described briefly. Conclusions should not be included in the Introduction.
- **Methods:** The research plan, materials (or subjects), and methods used should be described in that order. The names and locations (city, state, and country only) of manufacturers of equipment and software should be given. Methods of statistical analysis and criteria for statistical significance should be described.
- **Results:** The results should be presented in logical sequence in the text, tables, and figures. If resulting parameters have statistical significance, P-values should be provided, and repetitive presentation of the same data in different ways should be avoided.
Different forms should be avoided. The results should not include material appropriate for the discussion.

- **Discussion:** Observations pertaining to the results of the research and other related work should be interpreted for readers. New and important observations should be emphasized rather than merely repeating the contents of the results. The implications of the proposed opinion should be explained along with its limits, and within the limits of the research results, and the conclusion should be connected to the purpose of the research. In a concluding paragraph, the results and their meaning should be summarized.

- **Conflict of interest:** Any potential conflict of interest that could influence the authors’ interpretation of the data, such as financial support from or connections to companies, political pressure from interest groups, or academically related issues, must be stated.

- **Acknowledgments:** All persons who have made substantial contributions, but who have not met the criteria for authorship, are to be acknowledged here. All sources of funding applicable to the study should be stated here explicitly.

- **References:** In the text, references should be cited with Arabic numerals in brackets, numbered in the order cited. In the references section, the references should be numbered and listed in order of appearance in the text. The number of references is limited to 20 for original articles. All authors of a cited work should be listed if there are six or fewer authors. The first three authors should be listed followed by “et al.” if there are more than six authors. If a reference has a digital object identifier (DOI), it should be supplied. Other types of references not described below should follow The NLM Style Guide for Authors, Editors, and Publishers (http://www.nlm.nih.gov/citingmedicine).

**Journal articles**:

**Books and book chapters**:

**Online sources**:

**Conference papers**:
8. Shell ER. Sex and the scientific publisher: how journals and journalists collude (despite their best intentions) to mislead the public. Paper presented at: 2011 CrossRef Annual Member Meeting; 2011 Nov 14-15; Cambridge, MA, USA.  

**Scientific and technical reports**:

**News articles**:

**Dissertations**:

- **Tables:** Tables are to be numbered in the order in which they are cited in the text. A table title should concisely describe the content of the table so that a reader can understand the table without referring to the text. Each table must be simple and typed on a separate page with its heading above it. Explanatory matter is placed in footnotes below the tabular matter and not included in the heading. All non-standard abbreviations are explained in the footnotes. Footnotes should be indicated by , , , ...
Statistical measures such as SD or SE should be identified. Vertical rules and horizontal rules between entries should be omitted.

**Figures and legends for illustrations:** Figures should be numbered, using Arabic numerals, in the order in which they are cited. Each figure should be uploaded as a single image file in either uncompressed EPS, TIFF, PSD, JPEG, and PPT format over 600 dots per inch (dpi) or 3 million pixels (less than 6 megabytes). Written permission should be obtained for the use of all previously published illustrations (and copies of permission letters should be included). In the case of multiple prints bearing the same number, English letters should be used after the numerals to indicate the correct order (e.g. Fig. 1A; Fig. 2B, C).

3. Reviews

Reviews are invited by the editor and should be comprehensive analyses of specific topics. They are to be organized as follows: title page, abstract and keywords, main text (introduction, text, and conclusion), acknowledgments, references, tables, figure legends, and figures. There should be an unstructured abstract of no more than 200 words. The length of the text excluding references, tables, and figures should not exceed 5,000 words. The number of references is limited to 100.

4. Case studies

Case studies are intended to report practical cases that can be encountered during editing and publishing. Examples include interesting cases of research misconduct and publication ethics violations; experience of new and creative initiatives in publishing; and the history of a specific journal development. They are to be organized as follows: title page, abstract and keywords, main text (introduction, text, and conclusion), acknowledgments, references, tables, figure legends, and figures. There should be an unstructured abstract of 200 words maximum. The length of the text excluding references, tables, and figures should not exceed 2,500 words. The number of references is limited to 20.

5. Essays

Essays are for the dissemination of the experience and ideas of editors for colleague editors. There is no limitation on the topics if they are related to editing or publishing. They are to be organized as follows: title page, main text (introduction, text, and conclusion), acknowledgments, references, tables, figure legends, and figures. The length of the text excluding references, tables, and figures should not exceed 2,500 words. The number of references is limited to 20.

6. Editorials

Editorials are invited by the editor and should be commen-
taries on articles published recently in the journal. Editorial topics could include active areas of research, fresh insights, and debates in all fields of journal publication. Editorials should not exceed 1,000 words, excluding references, tables, and figures. References should not exceed 10. A maximum of 3 figures including tables is allowed.

7. Book reviews

Book reviews are solicited by the editor. These will cover recently published books in the field of journal publication. The format is same as that of Editorials.

8. Correspondence

Correspondence (letters to the editor) may be in response to a published article, or a short, free-standing piece expressing an opinion. Correspondence should be no longer than 1,000 words of text and 10 references. In reply: If the Correspondence is in response to a published article, the Editor-in-Chief may choose to invite the article’s authors to write a Correspondence Reply. Replies by authors should not exceed 500 words of text and 5 references.

9. Video Clips

Video clips can be submitted for placement on the journal website. All videos are subject to peer review and must be sent directly to the editor by e-mail. A video file submitted for consideration for publication should be in complete and final format and at as high a resolution as possible. Any editing of the video will be the responsibility of the author. *Science Editing* accepts all kinds of video files not exceeding 30 MB and of less than 5 minutes duration, but Quicktime, AVI, MPEG, MP4, and RealMedia file formats are recommended. A legend to accompany the video should be double-spaced in a separate file. All copyrights for video files after acceptance of the main article are automatically transferred to *Science Editing*.

10. Commissioned or Unsolicited Manuscripts

Unsolicited manuscript with publication types of original articles, case studies, essays, and correspondence can be submitted. Other publication types are all commissioned or invited by the Editorial Board.

Table 1 shows the recommended maximums of manuscripts according to publication type; however, these requirements are negotiable with the editor.
Table 1. Recommended maximums for articles submitted to Science Editing

<table>
<thead>
<tr>
<th>Type of article</th>
<th>Abstract (word)</th>
<th>Text (word)</th>
<th>References</th>
<th>Tables &amp; figures</th>
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</thead>
<tbody>
<tr>
<td>Original article</td>
<td>250</td>
<td>2,500</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>Review</td>
<td>200</td>
<td>5,000</td>
<td>100</td>
<td>No limits</td>
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<tr>
<td>Case study</td>
<td>200</td>
<td>2,500</td>
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<td>10</td>
</tr>
<tr>
<td>Essay</td>
<td>200</td>
<td>2,500</td>
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<td>Editorial</td>
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<tr>
<td>Book review</td>
<td>No</td>
<td>1,000</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Correspondence</td>
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<td>-</td>
<td>1,000</td>
<td>10, 3</td>
</tr>
<tr>
<td>Letter to the editor</td>
<td>No</td>
<td>-</td>
<td>500</td>
<td>5, 3</td>
</tr>
<tr>
<td>In reply</td>
<td>No</td>
<td>30 MB, 5 min</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Maximum number of words is exclusive of the abstract, references, tables, and figure legends.

7. FINAL PREPARATION FOR PUBLICATION

1. Final Version
After the paper has been accepted for publication, the author(s) should submit the final version of the manuscript. The names and affiliations of the authors should be double-checked, and if the originally submitted image files were of poor resolution, higher resolution image files should be submitted at this time. Color images must be created as CMYK files. The electronic original should be sent with appropriate labeling and arrows. The EPS, TIFF, Adobe Photoshop (PSD), JPEG, and PPT formats are preferred for submission of digital files of photographic images. Symbols (e.g., circles, triangles, squares), letters (e.g., words, abbreviations), and numbers should be large enough to be legible on reduction to the journal’s column widths. All of the symbols must be defined in the figure caption. If the symbols are too complex to appear in the caption, they should appear on the illustration itself, within the area of the graph or diagram, not to the side. If references, tables, or figures are moved, added, or deleted during the revision process, they should be renumbered to reflect such changes so that all tables, references, and figures are cited in numeric order.

2. Manuscript Corrections
Before publication, the manuscript editor may correct the manuscript such that it meets the standard publication format. The author(s) must respond within 2 days when the manuscript editor contacts the author for revisions. If the response is delayed, the manuscript’s publication may be postponed to the next issue.

3. Galley Proof
The author(s) will receive the final version of the manuscript as a PDF file. Upon receipt, within 2 days, the editorial office (or printing office) must be notified of any errors found in the file. Any errors found after this time are the responsibility of the author(s) and will have to be corrected as an erratum.

8. PAGE CHARGES OR ARTICLE PROCESSING CHARGES
No page charge or article processing charge applies. There is also no submission fee.

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NOTICE: These instructions to authors will be applied beginning with the February 2014 issue.
☐ Manuscript in MS Word (docx) or RTF format.

☐ Double-spaced typing with 11-point font.

☐ Sequence of title page, abstract and keywords, main text, acknowledgments, references, tables, figure legends, and figures. All pages numbered consecutively, starting with the abstract.

☐ Title page with article title, authors' full name(s) and affiliation(s), corresponding author's e-mail, running title (less than 50 characters), and acknowledgments, if any.

☐ Abstract up to 250 words for original articles and up to 200 words for reviews, essays, and features. Up to 5 keywords.

☐ All table and figure numbers are found in the text.

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