Career in scientific publishing

(...with post-graduate degree)

Min Cho, Ph.D.
Associate Editor
Nature Publishing Group
Scientific editing as a career

What does a scientific editor do, exactly?
Core tasks of a manuscript editor

....is in the manuscript selection process.

(i.e. does the journal publish a submitted manuscript or not?)
Core tasks of a manuscript editor

- Read new manuscript submissions – Is the conclusion scientifically justified?
- Lead the discussion with other editors and make initial editorial decision; to review or editorially reject?
- Manage manuscripts through external review; assign reviewers, make decisions, write letters.
- Check accepted manuscripts pre-publication
...but nowhere near as glamorous as
The Editorial Process
Papers go in... Publication process... Papers come out...
Papers go in...

Publication process

Papers come out...

But what happened inside the box???
Editorial flowchart

New submission

How the brain works

Editor decision

Peer review

Returned to author

Editor decision

Accept

Revision

Reject/major revisions

Reject

Original submission date

New submission date

Editorial Process

Do not distribute without permission
What types of papers are published?

**Primary research articles**: Brief Communications, Articles, Technical reports, Resource

**Review material**: News & Views, Perspectives, Reviews, Focuses, Book Reviews

**News material**: NN has none (some NPG sister journals do)

**Opinions**: Editorials, Correspondence, Commentaries

*Nature* also regularly publishes Essays and short science fiction!
What are we looking for?

Stories that your lab neighbours might want to read
(even though s/he doesn’t work on the same topic)

Data of high quality and of technically sound experiments

Papers that will excite your research community
What are we looking for?

- Conceptual Advance.
  
  Does the dataset settle a long-standing debate?

  Does the paper change the way in which scientists think about a biological question?

- Novelty of conclusions.

- Strength of conclusions - alternatives ruled out?

- Mechanistic insight, physiological & functional relevance, generality of findings.
Peer review process
Selecting external reviewers

we look for referees who are/have....

Technical expertise

Broad knowledge of field and familiar with the journal and its scope/caliber

Efficient

Fair-minded

Avoid obvious conflicts of interest
Why are referees anonymous?

Prevents bland, timid reviews

Corrects for power imbalance

Reduces opportunities for favor trading

Lets scientists stay friends

Many referees would refuse to review

Editors, not referees, take the ultimate responsibility for decisions
Why not keep authors anonymous?

Referees can guess their identities

Self-citation

Work presented at meetings

Famous authors are more likely to be identifiable

Not likely to improve quality of review

The Editorial Decision after review

Full review and decision takes about 1 month

Editors make a decision based on arguments; we don’t just count referee votes

We try to avoid more than two rounds of review. Multiple rounds of review tend to exhaust referees, editors and authors.

Appeals are considered, but the threshold is high.
Revisions

Peer review will help you make the paper better.

Address the major issues with substantial revisions.

Write a good ‘response to reviewers’.

Remember that referees are busy.

Know when and how to argue.

Remember there is a next time, and there are other journals with different criteria.
Other responsibilities...

- Commission News and Views, Reviews, etc.

- Developmental editing.
The eye on the needle

Eileen Kowler & Han Collewijn

Tiny gaze shifts, or microsaccades, have little function in the eye movement control system and were once thought to be suppressed during fine spatial judgements. A new study suggests that they are important for finely guided visuomotor tasks and may actively contribute to the acquisition of spatial information in the same way as do larger saccades.

A driver’s nightmare, prowling a crowded parking garage looking for a space and late for an important appointment. Finally, you find a spot, but the parked cars on either side are too close to the dividing lines that there is barely enough room to maneuver. You slowly creep in, mindful of the door handles and mirrors jutting out from the cars on each side. You shift your gaze to the left, then right, and then left again, each shift of gaze coinciding with a small adjustment of the steering and advancement forward, until, finally, you’re in the space with no dents or scratches anywhere. The ability to appropriately direct your gaze makes all the difference to your parking success.

A recent study by Ko et al.1 provides some new and surprising insights about how such gaze shifts contribute to vision. The authors studied eye movements while threading a needle, a so-called microsaccade task, to scan the scene and allow us to apprehend the details of one portion of the scene at a time.

All this work that goes into planning saccades and shifting gaze would not be needed if spatial resolution, visual acuity, were of uniformly high quality across the visual field. Just such a situation applies to human vision when spatial details fall in the very center of the field, the central 0.5 degree, where acuity is remarkably good2,3. Thus, it is curious that human beings have the capacity to produce and control extraordinarily small saccades. Saccades as small as 5 min of arc, termed microsaccades, were first noticed in the human eye movement pattern in the 1950s during studies of eye movements made while maintaining fixation on a small stationary target4,5.

The microsaccades observed during fixation are critical for visual tasks such as threading a needle. These rapid, small movements help to refine the location of fixation, allowing for precise visual tracking and manipulation, a task that is exemplified in the act of threading a needle.
Other responsibilities...

- Commission News and Views, Reviews, etc.

- Developmental editing.

- Write editorials and other misc. items.
EDITORIAL

nature neuroscience

Butting heads

A recent controversy on sport-related dementia underscores the need for comprehensive epidemiology studies.

Accumulating evidence has suggested that professional players of American football might be at increased risk of early-onset dementia. This October, a string of heated debates on this issue culminated in a US congressional House Judiciary Committee hearing in which the National Football League (NFL) denied a possible link between concussions, chronic traumatic encephalopathy (CTE) and other dementia-related neurodegenerative disorders, despite scientific evidence to the contrary. As an antitrust-exempted franchise that generates billions of dollars annually, the NFL has a deep financial stake in this issue. However, although few would disagree with the notion that repeated head trauma is likely to have bad consequences, there is surprisingly little epidemiological data on the prevalence, both among the general public and in professional athletes, or the factors that could potentially increase the risk of CTE. Instead of denying culpability, the healthcare professionals over many years, allowing accurate diagnoses of disease progression and factoring in any diagnostic variability. An example of one such study is the recently completed Alzheimer’s Disease Neuroimaging Initiative (ADNI), which provided a 5-year longitudinal study of 800 elderly volunteers at various stages of cognitive decline. Even ADNI, however, comes with caveats, as the timing and duration of the study is critical. How early and how long should the subjects be monitored? For many disorders such as Parkinson’s or Alzheimer’s, there are neuronal changes that can occur long before the subjects show symptoms, and catching subjects early enough may also be difficult. Diagnostic parameters that may cause subtle brain changes may be missed entirely if the patients are not studied early enough.

Despite the potential design issues and interpretational caveats,
Other responsibilities…

- Commission News and Views, Reviews, etc.
- Developmental editing.
- Write editorials and other misc. items.
- Write press releases.
Other responsibilities...

- Commission News and Views, Reviews, etc.
- Developmental editing.
- Write editorials and other misc. items.
- Write press releases.
- Special projects (supplements, focus issues, etc.)
Focus issue

Collection of Reviews, Perspectives, etc.

Focus on neurodegeneration
CNS regulation of circulating cholesterol
Visualizing newly synthesized proteins *in situ*
Other responsibilities...

- Commission News and Views, Reviews, etc.
- Developmental editing.
- Write editorials and other misc. items.
- Write press releases.
- Special projects (supplements, focus issues, etc.)
- Go to scientific conferences, visit scientists/institutions.
- Help organize meetings.
Scientific editor as scientist

- Immersion in the forefront primary research.
- Critical scientific thinking.
- Networking with the scientific community.
- Exposure to broad number of topics

instead of being an inch wide and a mile deep, you are a mile wide and an inch deep....
Scientific editor as ex-scientist

- Deadlines and schedules are short (instant gratification, relatively speaking).

- Hours are generally shorter, time pressure is greater

- Working in a “company environment” (but with the other foot still immersed in academia…)

- Focus on clear communication of ideas to a wide audience.
How we select editors

- Strong research background (PhD; post-doc experience helpful).

- Breadth of scientific interests.

- Manuscript test!

- Interest in science communication.

- Writing ability (desirable but not essential).

- Good ambassador for journal.
Types of positions at NPG

Positions are always advertised (e.g. naturejobs.com)

Editorial internship (6 months in NYC or London office, any area of science)

Manuscript editors (Nature and the Research Journals)


Review Journal editors

Copy Editors (edit accepted manuscripts for style and language and make papers more accessible to a general audience. Do not require PhD, but do require some science background.)
Nature Publishing Group

- *Nature* launched in 1869
- Privately owned (Macmillan is now owned by Holtzbrinck Group)

- *NPG* titles: *Nature*, research monthlies (n=16), review journals (n=15), and online-only journals (n=2).

- Publication logistics for society/academic journals and references

- Relatively small from a publishing perspective
  Focus on prestige rather than volume;
  NPG makes up ~1% of literature; ~25% for Elsevier
What makes the NPG journals unique?

• Highly selective, high impact
• Full time professional editorial staff
• No external editorial board or affiliations
• Editorially independent of each other
• Share general policies but not submissions; Manuscripts passed on to other NPG journals *only* at request of authors
Other possibilities for careers in scientific publishing

- Other journals (*Science, Cell Press, PLoS, etc*)
- Copy editing (*journals, freelance.*)
- Book editing & acquisitions
- Medical writer (*Pharma companies, continuing medical education, etc.*)
- Science journalism
Editors’ subsequent career choices

- Rise within the company
- Switch to company’s business arm
- Take a job with another scientific journal
- Freelance, science journalism, other media jobs
- Work with funding agencies (government, or private charities)
- Pharmaceutical industry
- Science policy
- Academic administration
Finally,

we, the editors, at Nature Neuroscience are.....
We ARE...

1 Editor-in-chief +
5 senior/associate editors.

All have Ph.D.s
(some with postdoctoral experience)

Handle wide varieties of topics
(Some topics more than others, but stay generalized...)

Kalyani Narasimhan
Editor

Hannah Bayer
Senior Editor

Charvy Narain
Senior Editor

Kathleen Dave
Associate Editor

Min Cho
Associate Editor
My own career path…

B.S. in Neural Science from New York University

Research Associate at Univ. California, San Francisco
(in cardiovascular and lipid/cholesterol research)

Ph.D. in Molecular Biology and Neuroscience from Princeton University
(Topic: molecular processes in mammalian learning and memory; advisor: Joe Z. Tsien)

Post-doc with my Ph.D. advisor at Boston University

Started at NPG as an assistant editor at NN in 2007.
“We believe that in a former life she was an editor”

—The New Yorker