

## Are we on a voyage to the unknown?

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Further development of the web may take over as the medium of choice to establish worldwide viewing and dissemination of knowledge

What is the role of the *British Journal of Ophthalmology*? We serve, as editors of an academic journal, to deliver and disseminate knowledge fairly, accurately, and without discrimination throughout the world. This can only be done in tandem with publishers, but publishing has changed and continues to develop radically. Present systems of disseminating research through journals have many failings,<sup>1</sup> not least of which is what the journals give the authors in return. Also, with so many journals and publishers, it is often difficult for readers to retrieve information. This is exemplified by the common and expensive task of retrieving all relevant studies for systematic reviews (even without entertaining the thought of bias as to why some studies were never published). Traditionally, although articles were considered to be published once they appeared in a paper journal, it was generally agreed that the academic community could have prior knowledge (often several months) of the work, from presentations at meetings, abstracts, and proceedings, etc. So why have eprints not been enticing? We have a moral duty to disperse information globally, allowing translation of work from all continents and generating a two way flow of information for the public, generating equity in health care and scientific endeavours in all corners of the world. Even with the present system, given the huge increase in submitted manuscripts how do we best ensure unbiased scientific quality control? Many studies have focused on such issues,<sup>2,3</sup> attempting to ascertain the "best" way forward. Despite methods of blinding reviewers to authors' identities or passing individual reviewer's comments to each other, the quality of peer review has not improved and bias and parochialism are still evident. Open peer review<sup>3</sup> did not appreciably affect the quality of review but did increase the likelihood of reviewers declining to review. Success in publishing has enormous professional relevance, increasing the power of one's CV, getting the lead over your peers for the next job, and generating a successful grant award. Surely we are all open to conscious or sublimi-

nal bias in our reviews. So the questions arise: how do we extinguish or at least minimise that bias and why are we not making the whole system more transparent? Standing at the crossroads and watching the increase in and demand for information, the ease with which information can now be delivered, and the need to break down traditional barriers allowing equity across the world for two way information flow, are leading us on to a voyage to the unknown.

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The debate continues within the National Institutes of Health in the United States, the BMJ, and other major publishing groups (including *New England Journal of Medicine* and *Lancet*). All are trying to establish new ways forward.<sup>4</sup> Electronic preprint servers allow archiving of electronic papers without prior peer review, including the *Lancet's* Electronic Research Archive, but they have not been grasped by the biomedical community.<sup>5</sup> The view remains that, given the increase in biotechnological research yielding an increase in commercial development towards improved health care, the established processes of peer review should be strengthened.<sup>6</sup> This has also been acknowledged by the Nature group who, while maintaining peer review, has recently stated: "in the interests of transparency and to help readers to form their own judgements of possible bias . . . (*Nature*) . . . will soon be encouraging authors to declare any competing financial interests in relation to research papers".<sup>7</sup> These measures, although admirable, will alone, probably, not cope with the escalating research output over the next decade. Indeed, although there are strong attempts to reduce bias and break down traditional

barriers improving transparency and increasing the flow of information, we have omitted an important fraction of the whole equation. So what about the readers? Should there not be ways to increase our knowledge base for their benefit? There have been proposals to establish online peer review; work accepted as an eprint could be revised on the basis of comments received publicly and/or some articles could be selected for commissioned review. Views against argue that there will be a lot of literature to trawl through, the weight of which will overwhelm the readers, and maintaining academic integrity would be very difficult. Academic integrity is already apparent if, for example, clinical studies show adequate statistical power, follow CONSORT guidelines,<sup>8</sup> and scientific studies are controlled by animal ethics and appropriate use of controls. We cannot ignore the expansion of healthcare and biomedical research, the ease at present of third parties to obtain information before official publication, and the present hierarchical bias that some say can occur with our present peer review system.

Are scientific papers out of date? Most non-researching health professionals would prefer information in an easily digested and scrutinised form. Although currently this remains the role of the journal as we know it, further development of the web may take over as the medium of choice to establish worldwide viewing and dissemination of knowledge. This may also include changing the way we write, allowing us to become more succinct, use active rather than passive tenses, and deliver clearly the important messages. Whether publication will change to allow the scientific/research community to peruse eprint servers, which could deliver the wealth of burgeoning information including, for example, more detailed methods and protocols, as well as a digested form for non-research active health personnel, remains to be seen. In the interim, some of the sciences have been enthusiastic about eprints, and in physics and astronomy this does not prevent later publication in peer reviewed journals. Embracing this perspective would allow dissemination of knowledge at the earliest stage, allow open discussion, and generate cross fertilisation of ideas so that peer review no longer becomes a closed shop debate but is open and transparent. This route does have issues to resolve such as ownership of research and accountability in the open forum, but personally I feel this should not hinder its progress.

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## Nystagmus

## Nystagmus surgery

## A Rivera

## Less may be more

For nearly a century ophthalmic surgeons have been intrigued by the possibility of surgical manipulation of the extraocular muscles to improve visual function in patients with congenital nystagmus. In 1906 Colburn described attaching the rectus muscles to the periosteum of the orbital walls in an attempt to reduce the amplitude of nystagmus.<sup>1</sup> Widespread acceptance of this procedure did not follow. However, in 1953 Kestenbaum<sup>2</sup> and Anderson<sup>3</sup> described surgical approaches to correct the abnormal head position adopted by some nystagmus patients. Kestenbaum suggested surgery on all four horizontal rectus muscles (recess-resect procedures in each eye) to move the eyes away from the "null position" of the nystagmus. In contrast, Anderson proposed simply recessing the yoke rectus muscles that move the eyes in the direction of the tonically deviated gaze. In 1954 Goto<sup>4</sup> concluded, after electro-oculographic studies in nystagmus patients, that the horizontal rectus muscles that move the eyes away from the tonically deviated gaze are weak and, therefore, should be strengthened by resecting them. Various modifications of these procedures to address the horizontal anomalous head position with nystagmus have been described.<sup>5–8</sup> Today most surgeons prefer to operate on all four horizontal rectus muscles (recess-resect in each eye) when there is no significant co-existing strabismus. However, recently there has been revised interest in modifications of the two muscle procedure described by Anderson.<sup>9</sup>

Anomalous vertical head positions or head tilts either in isolation or in combination with anomalous horizontal head positions may also be seen in association with nystagmus. A number of different approaches have been suggested to treat patients with a combined anomalous

head tilt. In the case of co-existing anomalous horizontal and vertical head positions Scott and Kraft<sup>6</sup> advocate a simultaneous vertical transposition of the horizontal recti and modified four horizontal muscle procedure (recess-resect in each eye). Others have suggested a two stage approach<sup>9,10</sup>: (1) reduce the anomalous horizontal head position with a modified two muscle recession (Anderson procedure); (2) postoperatively re-evaluate the head position to see if the vertical head position requires a second procedure. Although several ingenious procedures have been described<sup>11–13</sup> to reduce an anomalous head tilt associated with nystagmus there are still limited data on these procedures and the best choice among these techniques is not established. Nevertheless, simultaneous weakening procedures on both the horizontal and vertical muscles to correct a combined horizontal, vertical, and torsional head position associated with nystagmus has been described.<sup>14</sup>

In this issue of the *BJO* (p 267) Arroyo-Yllanges and co-workers publish the results of a relatively large series of patients (21) with nystagmus and an anomalous combined head posture. They utilised a modified Anderson procedure with recessions 2 mm behind the equator (in the absence of strabismus). Although the follow up period is relatively short (18.5 months average) the results are promising. Significant improvement in the anomalous head position was recorded in all three planes, except for two patients. It is unclear why addressing only the horizontal face position by recessing just two horizontal rectus muscles should improve the vertical and torsional components of the anomalous head position. Moreover, the corrections were significant up to 20 degrees of correction for both the vertical and torsional components of the anomalous

head position. We will be interested to see what longer follow up studies of this procedure document. All previous long term studies of surgery to correct the anomalous head posture associated with congenital nystagmus have reported a disturbingly high recurrence rate. Nevertheless, for the moment Arroyo-Yllanges and co-workers have provided provocative data to suggest that in the case of surgery for anomalous head positions associated with congenital nystagmus less may be more.

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