

## EDITORIAL

**WWDD? (What Would Darwin Do?)**

We have just celebrated the 200th anniversary of the birth of Charles Darwin and the 150th anniversary of the publication of *On the Origin of Species*. While I hope we all rejoiced in the success of evolutionary biology and its continued growth, we should not become complacent. Although these are indeed events to celebrate, we still face the real threat of general ignorance of Darwin's ideas. World leaders (or would-be world leaders) still promote superstition, stories and unthinking acceptance of dogma over scientific evidence. Evolutionary biologists have succeeded in investigating the magnificence, the wonder, the complexity, and the detail of evolution and its role in generating biodiversity. Evolutionary biologists have been less successful in making this relevant to those who are not biologists (and even, alas, some biologists). Is evolutionary biology likely to thrive when governments demand an immediate return on their research investment? How do we begin to educate others as to the value and importance of evolutionary research? I do not begin to claim that I can fathom the mind of Darwin, but I cannot help wondering – what would Darwin do today? Would he respond? How would he respond? And, what would be the form of his response?

All of the Darwin biographies that I have read suggest two things. First, although Darwin may not have engaged directly, he would not avoid the debate. He might not have presented television shows detailing the value of understanding evolution as a way of interpreting our world, but Darwin would have defended his ideas in the way he knew best – by pursuing science and gathering evidence to be presented at scientific meetings and in publications. This work would have been viewed first by trusted peers, to ensure that the arguments were clear and to avoid misinterpretations. Darwin clearly recognized the potentially inflammatory and challenging nature of his ideas on natural and sexual selection. And while Darwin left the public engagements to others, he did respond and defend his ideas in writing. Ultimately, it is scientific evidence that will win. Basic research is still the best argument for evolution. The value of evolutionary biology may need promotion, we may need to popularize, but the popularization of evolution and the development of applications for evolutionary biology will rest on basic research.

The question then becomes where to publish this research. Darwin is best known for his books, but he was publishing his work 150 years ago. For the most part,

today, we write scientific peer-reviewed papers. So if he wrote papers, where would Darwin publish? This is actually what I want to debate. I certainly do not suppose to suggest the specific journal or journals he would choose (even I am not so arrogant to suggest that the *Journal of Evolutionary Biology*, fondly known as JEB, would be the journal of choice for Darwin)! Rather, I am interested in thinking about the particular forum he would select. Darwin was shrewd and he recognized the value of putting ideas to the proper audience. Today, the accepted forum that ensures peer-reviewed or vetted publications is journals. While this could certainly change in future, there really is not a serious contender in 2009–2010. However, the sorts of journals that are available are undergoing changes. What sort of journal would Darwin choose? Would Darwin choose to publish in open access journals? Would he publish indiscriminately? What would Darwin do (Fig. 1)?

I like to think that Darwin would choose Society-based journals to promote his ideas. I think he would want the support of other learned individuals that is implied by a Society, that he would want the Society to help in promoting his ideas. I believe he would support the other efforts of Societies to promote evolution and to debate the science at Congresses or meetings. I think this because in fact publishing is just one facet of scientific



**Fig. 1** Logo for WWDD buttons provided by Wiley-Blackwell, the publishers of the *Journal of Evolutionary Biology*, at the XII European Society for Evolutionary Biology Congress in Turin, Italy. Artwork courtesy of Finbar Galligan, Wiley-Blackwell.

communication. You also need the work to be seen and appreciated by the appropriate audience. Yet my experience is that few people consider Society-based vs. commercial or Society-less publications when considering where to publish. And yet, very different groups are profiting from your research depending on where you choose to publish (Table 1).

Let me elaborate the reasons to publish in Society journals like JEB. Societies have a long history of providing an outlet for ideas. The formation of Societies is often driven by two objectives: to hold annual meetings and to produce a journal (often now journals) for the dissemination of research. Such was the case for the Society for the Study of Evolution in the United States (<http://www.evolutionarysociety.org/history.asp>) and, more recently, the European Society for Evolutionary Biology (<http://www.eseb.org/>) (Stearns, 2008). Societies exist to promote the research of their members (and others – most Societies, uniquely, tend not to completely discriminate based on being a member of the club), which they do through meetings and journals. They exist to allow their members to have a forum for new ideas, and they do try to find ways to provide added value by being a member. Society-based journals play a complementary role to that of scientific meetings; hence the reason for Societies to promote both journals and meetings.

In the world today, there are many journals and many choices for your work. In the field of evolutionary biology the number is increasing. So why publish in a journal that is run by a Society as opposed to Society-less journals? Moreover, there are new economic models for journals, which most Societies have been cautious to embrace. Open access journals, which are apparently ‘free’ to the consumer (more on the reason for apostrophes later), have been advocated as and superficially appear to be the best way to promote your research widely, so why not choose this forum even if it is Society-less? Societies, by and large, have stuck with conventional relationships with publishers, where research is published in both paper and electronic journals but where open access can be an expensive option. This is certainly the case for JEB. Although we own the journal, we have a contract with Wiley-Blackwell that gives them the exclusive right to publish and distribute the journal. But Societies are certainly not against open access and embrace open access wherever possible (Table 1). For example, in JEB, all of our papers are open access 2 years after they are published. Wiley-Blackwell ensures that JEB is low cost or free via philanthropic deals to the world’s poorest nations by way of the AGORA, HINARI, OARE and INASP programmes. All reviews are immediately and universally open access. For regular papers, universal and immediate open access is also available, but requires an additional payment of \$3000. Yet, despite all the protestations I have heard that open access is the way forward, JEB open access is a rarely selected option for

authors. We hope that this changes, and as of September 2009 we have provided a reduced fee of \$1500 for ESEB members who wish to publish their JEB papers open access. This is a start, and we hope that members see this as a real benefit of membership in our Society, but should open access be the driving force for choice of outlet for your work? I think authors need to consider the wider implications of this choice.

I return to my question – Why publish in a Society journal? Perhaps one way to answer this is to consider why we have Societies in the first place. The primary reason, of course, is to foster interactions among members and hold meetings where there is a free exchange of ideas and debate. In addition to the journal, Societies sponsor meetings for presentation, debate and discussion of ideas. Meetings are valuable because you can engage in an immediate discourse with the researcher. One of the real joys of meetings is hearing new ideas well before they are published but at the same time these ideas have yet to be vetted by the peer-review system which (despite its deserving critics) does pick up important errors, omissions and need for clarification. Second, we are the public face of our field. Is evolutionary biology a field? One piece of evidence that it is, and that it is thriving and growing, is the growth in evolution Societies around the world (see ESEB website: <http://www.eseb.org/> and click on ‘Links’). The third reason for a Society is to promote the science (or field) it represents. Evolutionary biology is under attack and presidents of Societies that represent evolution are the front line of defence and promotion of public understanding. Schwartz *et al.* (2008) recently eloquently elaborated the case for Societies more fully. Society membership may also provide tangible benefits, such as increased access to the journal, no page charges, and reduced cost of colour figures and pictures, and reduced open access rates as mentioned above.

Given the goal of a Society is to provide a forum for published, reviewed research, why not open access? Should not everything be published as open access? I confess that the arguments for open access strike me as similar to those for teaching intelligent design alongside evolution – it is often phrased in terms of what is fair. Is not open access fairer? Why should publishers get fat on our work? Why can’t our work be made free to the public? What could be *fairer*? These arguments from the fair brigade strike a chord for most of us; we all want to at least be perceived to be fair. Unfortunately, the argument is not really about fairness but it is actually about money. Open access is not and has never been free. No matter where or how you publish, someone pays. A more accurate term for open access is ‘pay to publish’. Open access shifts the cost from the reader of the work to the producer. “What?! I didn’t pay!”, you may scream in indignation [can you tell I have had heated debates over this?] and indeed that may well be true – *you* may not have been presented with a bill – but *someone* paid. There is not a publisher out there who is working to make a

**Table 1** Examples of different types of scientific journals associated with evolutionary biology and their policies towards open access and profits. These are just examples of the journals that routinely or specifically publish papers on evolution, used to illustrate the variety of options open to authors and the readers. To save space I have provided the basic options; Society-based journals often have additional savings for members (e.g. free colour figures online).

Journal	Publisher	Society affiliation	Open access (OA) policy*	Cost to author	Profits
General journals					
<i>Nature</i>	Nature Publishing Group	None	None	None	Publisher
<i>Science</i>	American Association for the Advancement of Science	American Association for the Advancement of Science	None	None	Publisher/Society
<i>Proceedings of the National Academy of Sciences</i>	National Academy of Sciences	National Academy of Sciences (invited membership)	Immediate OA with payment of surcharge	\$70 per page; additional \$1200 for OA (\$850 if institution has site licence for online access)	Publisher/Society
<i>PLoS Biology</i>	Public Library of Science	None	Exclusively	\$2900; discount for institutional members	Publisher
Specialist journals					
<i>American Naturalist</i>	University of Chicago Press	American Society of Naturalists	Never if print; OA for 'e-articles'	11 pages per year to members of ASN; \$55 per page for the first 11 print pages of their article, \$70 per page for page 12 and up	Publisher
<i>BMC Evolution</i>	Springer	None	Exclusively	£1025/US\$1700/€1190; free to the author if the institution has a membership	Publisher
<i>Evolution</i>	Wiley-Blackwell	Society for the Study of Evolution	All papers after 2 years; optional immediate OA	None for print only or \$3000 for immediate OA+print	Society+Publisher
<i>Journal of Evolutionary Biology</i>	Wiley-Blackwell	European Society for Evolutionary Biology	All papers after 2 years; optional immediate OA	None for print only or \$3000 (\$1500 if ESEB member) for immediate OA+print	Society+Publisher
<i>Systematic Biology</i>	Oxford University Press	Society of Systematic Biologists	All papers after 1 year; optional immediate OA	None for print only or £1500/\$3000/€2250 for immediate OA (£900/\$1800/€1350 if institution holds an online subscription)	Society+Publisher

\*Many funding bodies require that the accepted version of a paper be made available through an archive or repository such as PubMed Central 6 months after publication. The 'accepted version of the paper' is one that has been through peer review and has been given a final acceptance, but is not yet typeset or formatted by the publisher. Open access here refers to papers that are typeset in a journal's format.

permanent loss. If your organization or university has a 'membership', then your employer paid for you (Table 1). If you publish in a journal that goes for volume (often under the aegis of fermenting open debate, something I have yet to see fully embraced) and each of those thousands of papers per year pays a fee to publish, you are supporting them by volume. This is something that has attracted a lot of authors, but it is not clear that they understand the financial model that stimulates some of these high-volume, open access journals (Butler, 2008). This is an ethos practised by discount stores – sell cheap but make up the difference with volume. This would not worry me as high volume is often equated with 'cheap and low quality', except that libraries are increasingly under pressure to cut costs. It does not look like this trend will be reversed anytime soon. Should they belong to an 'open access' group, or should they have subscriptions that provide access to more traditionally published journals? What would happen if most work were suddenly open access? Why would libraries maintain any subscriptions at all? If you can get the paper you want without the library providing you the access, then why have libraries (except, of course, for those books that are not yet available electronically)? The debate about open access is actually very complicated, but it is worth considering that not everyone sees open access as a panacea for publishing research. It may not even be the best way to make your work available in developing countries (Gadagkar, 2008, 2009), especially given philanthropic deals such as that offered by Wiley-Blackwell. But make no mistake – there is no free lunch. It costs money to provide the 'value-added' portions to a manuscript. Providing a platform for submissions, copy-editing, typesetting (even electronically), and distribution alone are jobs that no Society wants to take on by itself.

Regardless of the moral arguments, my contention is that we authors may have missed the point. Given our current model for disseminating research through journals (and we continue to look at alternative models), do not ask 'Why should we pay?' Instead ask 'To whom should we pay?' I can think of three responses to this question, without suggesting they are exclusive or in order of importance. One, we want our work to be as widely and as easily available as possible. Second, we would rather someone else pays. And third, we do not want to make pay those who are least able to afford the luxury.

The decision of ESEB is to try and provide a model that meets the needs of our members. We are, after all, primarily a Society not a publisher. Therefore, while open access will still be available to all, ESEB members will get a 50% discount on the price. This makes open access in JEB cheaper than exclusively open access journals (Table 1). Why do we charge \$3000 for nonmembers? We use that money to support the work of the Society. We try to ensure that cutting-edge symposia are

supported to ferment that debate and delight of hearing something genuinely new at a meeting. We try to make the meeting attractive to members so they want to attend. We provide travel grants. We have prizes to celebrate our members who deserve recognition. We provide the journal to developing countries at no or minimum cost to them. Everything costs money. Our records are open and you can see how this money is spent. This is presented at the open member's meeting at every Congress.

At JEB, everyone's work becomes open access after 2 years. So everyone gets open access but if you want it immediately you have to buy it. Why not simply switch to all open access? Well, we sell the journal through subscriptions. Virtually all our money is earned this way (membership fees actually contribute very little once you consider the costs of processing members, etc.). We could simply go to an open access system, and charge the producer of the work (or their institution). If we were to do this, however, libraries would (and should) stop subscribing. They would be providing a service you do not need. You may even decide you do not need to be a member of the Society if it does not help provide access to published work. Workers in underdeveloped countries may be hardest hit (Gadagkar, 2008, 2009). Finally, the argument that our open access charges are too high is one we take seriously and we continually examine. However, there is a balance here – too low, and everyone would put his or her work into open access and we would not cover the cost of publishing (nor make a profit) and potentially hurt Society membership. We are trying to find the cost that is fair to you yet protects our journal. If you look at what we propose to charge ESEB members, you will find that it is similar or even less than most other open access journals (Table 1). Even for nonmembers, our charges compare favourably. We are not profit driven, but neither can we as a Society afford to lose money.

Another cost of Society-less journals is that of the cost of reviewing. It never ceases to amaze me that we willingly provide thousands of hours of volunteer time to publishers by providing them with expert advice. At JEB we have a mixed system of a Board of Reviewing Editors, who we rely on heavily to provide expert opinions, but we also use outside reviewers for about one-third of the reviews. With around 750 papers a year, each typically reviewed by at least two people, that is 1500 reviews! The Board of Reviewing Editors are provided with membership to ESEB but the other volunteer reviewers do this work for nothing more than our gratitude. McPeck *et al.* (2009) recently discussed the role of reviewers, their importance, and the effect they can have on a journal. As a co-author on this paper I recommend it to you, but I also wish to acknowledge and reiterate that reviewers are the backbone of our system. Given all this, I find it curious that individuals in our field (or any field) choose to support the Society-less journals by volunteering their

time. I am not criticizing – I have certainly reviewed for other journals, and typically did so when it seemed I might learn something by reviewing the paper – but I do think that we need to acknowledge that reviewing for a Society-based journal is the equivalent of volunteering your time and expertise for the Society, while reviewing for Society-less journals is simply donating to their bottom line.

So, what would Darwin do? I do not think he would abstain from expressing his opinions about evolution, nor would he give up on the value of basic evolution research. I do believe he would want to have his ideas openly debated in as many venues as possible. I believe he would therefore support Societies wherever possible. Societies allow us to do more than just publish our work and they deserve our support. The best, if not easiest, way you can support our Society is by sending us your best work. I am not naïve, however, and if you have a chance to put your work in a higher profile journal, by all means do so. But when you decide that your paper is too long or complicated for *Science*, *Nature*, *PLoS Biology* or *PNAS* (the latter, of course, is a Society-based journal) then send it to us or another Society-based journal. Do not opt for open access promoted by commercial publishing houses with the implied or even overt argument that they provide something we do not. Of course, I hope that you would choose JEB for all your work, but again I am not naïve. I too choose to publish in a variety of journals to ensure my work is read widely and I suspect others use diverse outlets for the same reason. I also choose to submit my work to other journals when JEB mistakenly declines my papers (it happens). No one, certainly not I, would claim peer review is perfect. But when its imperfections are inflicted on your work or when you feel the need for variety, make those other choices – Society-based journals. A small bonus is that other practising scientists, not professional journal editors, are handling your work. You will never have a more empathetic audience when papers are rejected. Rejecting papers is the only hard part of my job. But if your work is declined for

publication, you can always go down the publishing food chain to the Society-less journals. It is what I believe Darwin would do.

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