# Author's Commentary on "Stuff and Things: Paying for Publication"

Commentary On
Stuff and Things: Paying for Publication

The object of this case is to raise the related issues of the value of scientific information and the role played by agents of dissemination, such as journals. Scientists be aware of these issues early in their careers so that they may appropriately wield the power they have over their own products and better achieve their goals (whatever they may be). Established scientists may be interested in the issues raised by this case because they are in a position to act, making decisions about journal management that can establish a fair and effective mechanism of information dissemination.

1. Should the board even care whether *S&T* goes under? If the journal does fold, is anyone harmed? Why might the board be concerned with the "value" of the research it publishes?

Of course the board should care whether *S&T* goes under. Most academic societies have one fundamental purpose: to disseminate information to interested parties, usually via a journal and a meeting. If the journal folds, much of the purpose for ASST's existence goes with it, and ASST is fairly likely to collapse, as investigators establish stronger ties to the remaining journals that publish in their fields. A more interesting question is whether anyone else should care. There are people who may be harmed if the journal folds. Some, such as the employed staff of the journal are harmed for reasons other than disruption of the scientific enterprise. Others are harmed by the intellectual loss that would be created if *S&T* folds - for example, stuffologists and thingographers who are interested in how their own work ties in with work being done in the sister discipline. Scientists in other fields may be interested in having a consolidated location with the best stuff and things in it. The scientific establishment as a whole would be harmed by the loss of *S&T*, because it is a unique resource, deliberately trying to bridge two fields, a valuable contribution as science becomes more and more fractionated.

In one sense, the board is concerned with the value of the research it publishes because it seeks to retain the current prestige and status of ASST and the journal. At the top of its fields, the board would probably like to stay there. So it will try to publish the most influential, controversial, clever, insightful, well-executed research available. However, that is not what Naylor means by value. Naylor's argument is about the monetary (commercial) value of publicly published information. In this case, Naylor is referring to the commercial demand created by readers who want the information primarily, though not exclusively, for the scientific process (as opposed to those who primarily want to apply the information). In theory, the more valuable the information, the more that can be charged for a copy of the publication. ASST's position of manipulating the subscription price based on concerns other than demand, means that they probably need not be concerned with maximizing monetary value. (Monetary value may be correlated, however, with scientific value, which ASST does seek to maximize. Maximization of monetary value then becomes an indirect result, if ASST can maximize scientific value.)

2. How valid is Dr. Naylor's assertion? Can one legitimately treat research results as a marketable product? Are there values in academic publishing that make it substantively different from the rest of the publishing world?

Naylor's position grows out of the idea that scientific information is a product of creative labor, and, as with any other product of labor, the laborer should be justly compensated. Naylor thinks that the prestige/stature/recognition that accrues to authors in *S&T* is inadequate, or that there must be some component of monetary compensation. Naylor, as ASST President, clearly holds the respect of his colleagues and can probably give a reasonable assessment of the stature gained by authors in *S&T*. This stature may or may not be adequate reward for the amount of effort that goes into a publication. One cannot conclude that the compensation is adequate based on the fact that people continue to submit papers for publication, because *S&T*, as the top journal, offers the best compensation available (and the best may still be inadequate). The board might be able to make this determination by polling the membership.

Naylor's assertion that page charges devalue information is true, but only with respect to the monetary value of the information. If the authors believe themselves to be adequately compensated with stature, or if they are altruistic, the monetary devaluation probably matters little.

3. Who should be responsible for paying for the dissemination of research results? Who is the "consumer" of the journal? Does it even matter who pays as long as the information gets out?

Several parties are interested in having the results of research disseminated, including the researchers, the researchers' institutions, other researchers who might use the information, the agencies that funded the research and parties outside the academic community (such as policy wonks and venture capitalists). In the simplest situation, a product will have one producer (who becomes the seller) and one consumer (who becomes the buyer). Scientific information is much more problematic, because several different entities are involved in its production, and the same entities can be the consumers.

The primary consumer of the journal is the reader; and thus subscriptions (or individual copy charges) should be the primary mechanism for funding journals. Structured this way, all entities that may consume the scientific information will share in the costs of producing it. It may be feared that this arrangement will price journals so high that no one can afford them. However, that outcome is impossible, because the publisher needs subscribers to stay afloat. Under this system, if a journal cannot survive, then it really is not terribly useful to the scientific community. Note that that does not mean that *S&T* is not useful; rather, it points to the problems created by trying to artificially suppress subscription prices.

Some may argue that it is acceptable to charge the authors for the privilege of publishing their work. In this approach, the journal is selling a forum to authors. This interpretation is plausible, but it is basically a cycle of buying prestige: Prestigious publications justify grant funding, which is then used to purchase prestige and justify more funding. I doubt if any journals have descended to the point where they charge different rates for papers of varying quality, but if they did, they would need to indicate the charge to maintain the cachet of the journal's name. That seems unlikely, but many journals already charge different subscribers different rates, based on factors much more arbitrary than quality.

Who pays for dissemination affects the method and place a researcher decides to publish his work (although it isn't the exclusive determinant); it also affects the way a reader finds the work and the costs incurred in so doing. The value to the researcher of the work going out must be balanced with the value to the reader. If the system of paying for dissemination does not approximate this balance, then either the flow of information will be inhibited, or the consumer will be swamped by overload. Because the value ratio will vary, it is likely that having a mixture of information dissemination practices will be most efficient.

4. Does the value of the journal vary by whether it is published electronically or in hard-copy? What if many other related journals are moving toward electronic access?

This issue is large enough to deserve a whole discussion on its own. However, here we are mainly interested in whether it allows us to dodge the ethical dilemma created in deciding who should pay for research dissemination. If the cost is low enough to be negligible for all parties, then functionally the issue becomes moot.

Briefly, electronic publication, or at least electronic access, enhances the value of a journal. It will increase the accessibility of the journal to readers, both in ease of access and speed. Rolling publication of papers becomes a possibility. A unique advantage is the search capability afforded to electronic text, which, if well done, will mitigate the possible information overload that could be created. If many other journals become electronic, and *S&T* does not, *S&T* will probably lose stature due to its relative inaccessibility.

5. How do different journals' publishing practices affect the flow of information in science? Can they affect the functioning of the scientific community? What responsibilities do journals have in the scientific enterprise?

This is the critical issue raised by the case, and Questions 1-4 have merely been leading up to it. By now, discussion participants should have touched on these questions, if not explored them in depth. However, some may be slightly lost unless it is made clear to them that the issue rests on the assumption that efficient flow of information is crucial to the ability of scientific investigation to explain phenomena. Efficiency is not rapidity - papers could come out much more rapidly if they were neither edited, reviewed nor revised. This change would substantially hamper readers' ability to distill what is useful to them, a problem that generates as many complaints as does the current speed of the publication process. There appears to be a trade-off between speed and utility, and the functioning of science depends, in part, on journals seeking to maintain an appropriate balance between the two.

6. Are there any ethical issues involved in attempting to manipulate the value of a scientific publication by means other than the quality of the papers published?

This issue is unrelated to the major issues of the case, but several reviewers were uncomfortable with the notion that a journal would use "dirty tricks" to manipulate its perceived value. One thing to remember is that this approach is possible only when the system used to rate journals is flawed. Using those flaws to leverage the true value of a journal isn't necessarily unethical; perhaps it is the flawed evaluation system that needs revision. Another consideration is that the approaches *S&T* uses to inflate its value may simply be catalysts of a positive feedback because perceptions of high quality will attract a broader and better class of manuscripts.