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Fish stocks, grazing land and reviewers: exploring the usefulness of the tragedy of the commons for understanding the reviewer resource problem

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Thomas Stafford's timely piece (2018) will resonate with anyone who has struggled to find qualified reviewers, whether for a journal or a conference (e.g. Urquhart et al. 2017). Effective peer review processes uphold the integrity of journals and conferences as well as the quality of the individual articles published in them (cf Safi 2014). As Rai (2016) notes, the primary focus of the review should be on the contribution of the paper and consideration of major issues that would affect the publishability of the work. Reviewers add value to the research article (and the academic field more generally) by providing feedback based on their areas of expertise which might be domain, theory or method knowledge.

The challenge for any enterprise that wants to ensure a quality review process is therefore to have sufficient reviewers for the submissions that they receive. As is the case in any dynamic academic field, the number of submissions is growing rapidly in information systems. Information Technology and People, the journal I co–edit, for example, has had a 40% increase in submissions this year and is likely to reach 400 submissions in a year. Similarly, our leading conferences need to handle large (and growing) numbers of submissions. For example, Urquhart et al. (2017) note that ICIS 2015 received 1198 submissions. The scale of the review process immediately becomes apparent. If each paper requires three reviews, ICIS 2015 could have involved over 3500 reviewers. In practice, the conference "only" ended up using 2500 people as many people reviewed more than one submission.

While Stafford's piece is, in part, a response to the challenge of managing the review process associated with increasing numbers of submissions, he chooses to view the issue from a particular perspective, namely Hardin's concept of the tragedy of the commons (1968). Hardin's analysis illustrates the mismatched incentives associated with "common" or shared resources. Typical illustrations include European–style common land that can be used by anyone to graze their cattle upon, or natural reserves such as fishing stocks (Gordon 1954). The tragedy, according to Hardin, is that whilst there are individual incentives to consume more of the common resource (graze more cattle on the common land or catch more fish from the fish stocks), there is often no mechanism to manage the emergent effects of such actions. It is not sustainable for all farmers graze more cattle on the same land, nor is it feasible for all fishermen to catch more fish.

In the context of submitting academic papers, there is a similar mismatch between the incentives to submit papers for review (as successful publication will have individual career enhancing benefits) against the incentives for reviewing the submissions of others. The main benefits of quality reviews flow to the authors rather than to the reviewer.

Hardin's paper (1968) begins with a quotation that suggests that the problem has no technical solution and that any solutions require a fundamental extension in morality. Certainly, early versions of the reviewer problem were typically handled using moral measures and peer pressure. For example, in smaller conferences and journal special issues there has been an expectation that submitting authors would act as the primary reviewers for other submissions. The scale (and review management systems (cf Urquhart et al. 2017)) means that it was possible to identify individuals who were acting as free–riders and intervene using social pressures.

With larger, and more global, conferences and journals simply identifying free–riding behaviours is problematic. Moreover, as Stafford notes, there may well be genuine reasons why there might be limitations to reciprocal reviewing activities—including journal editing and conference organising.

Nevertheless, I feel that the specific way that Stafford uses the tragedy of the commons to support his argument risks diverting our attention from other important interventions that can help maintain the quality and integrity of the review process. In order to avoid this, it will be necessary to explore briefly some of the insights around what drives the tragedy that have appeared since Hardin's original piece was published.

A first distinction, which is implicit in Hardin's piece, is between rivalrous and non–rivalrous use of common resources. Use of the common land for grazing is rivalrous because if my cattle are grazing the land, yours cannot. Many digital goods, in contrast, are non–rivalrous: my consumption of a digital music file does prevent you from also consuming it (Lessig 2001). The resources associated with a review are, however, rivalrous: Time spent reviewing paper A cannot be used to review paper B instead.

Rivalrous consumption is one way to exclude other consumers but there may be other mechanisms, such as price or eligibility that can also exclude particular consumers (Weber 2004).

Another important dimension is the extent to which the availability of the common good is fixed. Clearly the amount of land available for grazing is fixed, as will be the number of fish found in any particular location.

A final important characteristic relates to the intrinsic qualities of the common good. In Hardin's analysis, any part of the grazing land is substitutable for any other (cf Barney 1996; Wernerfelt 1984).

Exploring these extra dimensions provides greater clarity for the argument that Stafford is making. He suggests that the commons "have become over–grazed" and “we are running out of resources, reviewer–wise” (Stafford 2018). However, the cases he provides to illustrate the problem of the mismatch of incentives to submit papers and to do reviews, quickly shift to the issue of availability of reviewers with particular expertise in domain, theory or method knowledge.

These potential reviewers are identifiable because they have published high quality research in their area of expertise in the leading journals and conferences in the field. That is, their status as experts is, in part, a consequence of the reviews their work has received when it was submitted. Stafford finds, however, that all too often, these experts, with skills he would like to draw on in the review process, are unable or unwilling to do so and he has to rely on reviewer resources from his social network, including academics who work in other, but related, academic fields.

Experts who are unwilling to act as reviewers may well be an example of the tragedy of the commons: they have become successful, in part, because of the quality of the reviews provided by others. Institutional incentives, however, typically only reward publications so these academics have no incentive to spend time on reviewing time that would be more (personally) productive if spent on research. Implicit in this cost benefit analysis is the belief that the reviewer gains little in terms of domain, theory or method knowledge refinement from the review process.

Stafford’s paper, however, also provides alternative explanations for why these expert academics are unable to review for him. First, in many contexts successful academics are ones whose work is highly cited. Highly cited work means that many other academics will study the same domain as the potential expert reviewer, or will use the same theories or methods. Thus, when looking for reviewers for this subsequent work it is not unreasonable for journal editors to look to the experts whose work inspired the subsequent paper and many journals will look to the same, small number of experts.

A parallel effect can arise when the expert is called upon to fulfil other time consuming roles including service and administrative roles or even acting as a mentor or co–author for junior colleagues because they have demonstrated their abilities in terms of research publications.

Although Stafford’s paper focuses on the challenges of finding expert reviewers, the criteria associated with Hardin’s tragedy of the commons suggest some ways in which we might address the potential problem of running out of reviewer resources.

First, just as the grass on common ground can regrow every year, as a thriving academic field information systems has new potential reviewers joining every year (even if the demand for them is variable over time (Frolick et al. 2005; Glover and Goette 2001)).

Simply studying for a PhD in information systems, however, does not mean that our junior colleagues are instinctively (telepathically?) able to become effective reviewers (Whitley 2016). Most PhD programmes do not offer specific sessions on what is involved in being a good reviewer or even what a useful review looks like (although there are many excellent online resources including (Davison 2015; Lee

1995; Rai 2016; Sarker et al. 2015; Wilkinson 2017) as well as many helpful editorials in our leading journals).

It is for this reason that in the past few years over 100 PhD students and junior faculty have attended workshops I have organised at conferences and universities on how to be an effective reviewer. These workshops have been supported by AIS and Emerald publishers and involve participants reviewing real papers and then making decisions on those papers based on the reviews received.

In the workshops, the participants learn about the pressures faced by review managers (editors, SEs, AEs, track chairs etc.) and come to appreciate, for example, why a (quickly) declined invitation to review is appreciated more than a late or poorly written review. They will also understand the situations where the review manager believes that there are few suitable alternative reviewers and might be prepared to wait for a review and those where the invited reviewer was more likely to be substitutable by another. Whilst working on this response, I've had two such invitations to review where my particular expertise was not easily substitutable and the review managers have been prepared to wait take longer than is the norm for those journals for my reviews.

Although participating in such reviewer workshops will not automatically produce specialist reviewers of the type Stafford frequently seeks, it will help improve the average quality of the reviews provided for information systems. It may well be that what Stafford is looking for in many cases is not just the detailed technical expertise of the reviewer on the domain, theory or method of a paper but also the ability to write a review that will be helpful to both the review manager (in deciding on how to proceed with the paper) and the author.

A second response to the general problem of running out of resources, reviewer–wise, is under the control of the review managers and involves a form of exclusion from the review process. Not all submissions to journals and conferences are at a stage where it will be beneficial to send them out for (full) review. Some cases involve papers being sent to inappropriate outlets. In other cases, the genre of the submission is inappropriate for the outlet (e.g., with the introduction of the AIS Transactions on Replication Research, Information Technology and People will no longer consider submissions that are replications or near replications of existing studies, e.g. technology adoption papers that simply involve a newer technology or a different respondent population). Similarly, the pre–screening of the paper might suggest that the paper is fatally flawed in a way that any reviewer will pick up.

In such cases, the review managers use their academic judgement to exclude the submission from the review process and "desk reject" it, thus not consuming valuable reviewer resources on what they deem to be unviable papers. The extent to which this discretionary power is used, however, will vary from outlet to outlet: a developmental workshop for PhD students is likely to be far more inclusive than a leading journal. Additionally, any such interventions need a strong element of reflexivity to ensure that scientific knowledge does not suffer as a consequence of the need to manage scarce reviewer resources (Alvesson and Spicer 2012).

Whilst improving the quality of the reviews received and only sending viable papers out for review can be directly influenced by journal editors and conference chairs, the final factors shaping the potential running out of reviewer resources is influenced by broader societal and institutional pressures.

In an era, where individuals and institutions are typically rated by both the quality and quantity of their publications, individual academics are increasingly adopting what amounts to a portfolio approach to managing the publication risk of their academic career. With uncertainty as to which submissions will be accepted (and which will be highly cited) there is increased impetus to submit many papers and "let the market decide" which ones will be influential (or at least highly cited).

Grey and Sinclair's (2006) "fantasy" of a Dean who decrees that no member of academic staff is to produce more than one article every five years and that the article must be concerned with ideas that are important to people is unlikely to become reality. However, the issue of limited reviewer resources should provide an impetus (within academia more generally—this is not an information systems specific problem) to reflect on the purpose of academic research and privileges associated with (often publicly funded) academic posts and tenure (Whitley and Hosein 2010). This would involve challenging the increasingly dominant mindset whereby the goal of creating, preserving, and distributing knowledge ceases to become an end value for academia. Instead, the ultimate goal is tenure or promotion, and the top journal publications are the means (Lyytinen et al. 2007, p. 321).

Stafford's paper raises important questions about the demand for and supply of reviewer resources within information systems. These are questions that we, as a field, need to reflect upon and respond to.

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