Fate of manuscripts rejected for publication in the AJR.

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Letters

Fate of Manuscripts Rejected for Publication in the *AJR*

Dr. Chew [1] did a follow-up on a cohort of scientific papers rejected by the *AJR* in 1986. He found that the majority of papers, more or less revised, appeared after some time in other journals.

Dr. Chew's conclusion that most scientific work, once submitted, will eventually be published is gratifying. It might suggest that publication bias is not a major problem. This bias occurs when certain papers, notably those with "negative" results, stand less chance of publication than papers that have "positive" results. As scientific consensus progresses on the basis of information from scientific journals, publication bias might be a seriously distorting factor.

I wonder, however, if a generalization based on *AJR* submissions is valid. As Dr. Chew points out, many papers are never submitted at all. In addition, scientists may perform some selection in choosing the journals they submit their papers to and usually will not submit a paper that they think stands little or no chance of being published in a particular journal. An author may wish to minimize the mental agony of too many rejections. Such a submission policy implies that the papers submitted to a prestigious journal such as the *AJR* are generally of high quality—perhaps not good enough for the *AJR*, but of sufficient quality to allow subsequent publication in another journal. However, papers submitted directly to less high ranking journals may not have a second chance after a first rejection and will indeed be lost.

In a study also cited by Dr. Chew, Dickersin et al. [2] found that a considerable publication bias exists. They wrote to authors of published papers on clinical trials about the authors' participation in other trials. Of a total of 1312 completed trials, information on 21% had never been published. Of the trials for which no articles were published, 86% had a negative result, whereas only 45% of those for which articles were published had a negative result. The cause of nonpublication was nonsubmission rather than rejection. Still, the investigators may have anticipated the policy of editorial boards of scientific journals. This policy was recently summarized by an editor of a leading medical journal who remarked that journals will not publish information on a trial that shows that penicillin does not cure cancer, but they will publish a paper on one that shows it does.

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2. Dickersin K, Chan S, Chalmers TC, Sacks HS, Smith H Jr. Publication bias and clinical trials. *Controlled Clin Trials* **1987**;8:343–353

Reply

I appreciate Dr. Rosendaal's commentary on my paper about the fate of manuscripts rejected by the *AJR* [1]. His letter raises two issues: (1) does publication bias occur, and (2) can the results of my study of rejected *AJR* submissions be generalized to the rejected submissions of other journals?

Publication bias can be defined as a systematic difference in the likelihood of publication of submitted articles that is based on whether an article has specific characteristics. In the context of Dr. Rosendaal's query, the one criterion resulting in publication bias is that the results reported in the manuscript are positive. That is, all other things being equal, a paper that reports a study with a positive result is more likely to be published than a paper that does not. It is an artifact of the scientific method that in observational studies it is easier to show the presence of an association between two factors (assuming an association is present) than it is to show the absence of one (assuming no association is present). The weaker the association, the more difficult it is to show the association scientifically (the larger the necessary sample size). Studies that do not show the presence of a strong association may not have enough statistical power (large enough sample size) to show the presence of a weak association or to show the absence of an association. It is probably because of this artifact that many observational studies are abandoned at the point where failure to show a strong positive result is evident but before enough data are collected to show conclusively a negative result. It should be realized that the lack of positive results includes both negative results and inconclusive results. Inconclusive studies are unlikely to be submitted or to be published. It is uncertain how many unpublished studies that did not have positive results had results that were actually inconclusive rather than negative. In the descriptive studies common to radiologic research, the problem of inconclusive results generally does not occur. However, if the description is of normal radiologic examinations associated with some disease process or clinical presentation, it will not be of much interest unless the prevailing paradigm is that there are abnormalities that should be evident on radiologic examination.

I did not have available to me the data necessary to show if manuscripts submitted to journals other than the *AJR* were as likely to be published, either in the journal of initial submission or in some other journal, as were submissions to *AJR*. It is certainly possible that journals of "lower prestige" than the *AJR* have higher initial rates

of acceptance than *AJR* but that the manuscripts these journals reject have lower rates of acceptance elsewhere. It is my impression that authors decide to publish a particular research result before they write the paper and ponder where to submit it. Once a paper is submitted, authors are likely to have invested so much time and effort in a project that they usually see the paper through to publication, regardless of whether the manuscript initially is rejected.

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REFERENCE

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A Simple Program for Rapid Retrieval of ACR Diagnosis Codes

Often a researcher wishes to find all the radiologic examinations of patients with a specific disease or condition. Unfortunately, although cases in teaching files are routinely coded with American College of Radiology (ACR) diagnosis codes, most routine examinations remain uncoded and are therefore unavailable for retrieval according to diagnoses. We estimate that providing ACR diagnosis codes manually by looking them up in the *Index for Radiological Diagnosis*, would occupy 10–20% of a radiologist's total film-reading time. Thus, routine coding is impractical.

In an attempt to reduce the time required to find the desired code, my colleagues and I wrote a simple list management program that allows rapid access to the desired code by the use of a mouse and menu interface. The codes themselves are available in electronic form from the ACR. Basically, a code consists of two to four digits representing the anatomy code, a decimal point, and two to five digits specifying the pathology code. A short description follows each code. The program reads the data file and creates a tree structure containing the code information. Ten trees are available, one for each of the 10 principal anatomic fields. In the first version of this program, we only use one anatomy digit (the principal field), though we do use the pathology digits. A leaf in the tree is a data structure that contai the short description of the digit in question and 10 pointers to oth leaves that represent the possible digits to follow. As not all t possible codes are used, the tree is dynamically allocated so th empty leaves do not consume memory. Because the entire structu resides in memory, access to all 10 trees is extremely fast. On t other hand, because the tree is dynamically created each time t program is run, it does take a fraction of a second to start t program. We find that the memory and computational speed of desktop workstation are not at all taxed by this program.

The user interface is based on the OpenWindows flavor of the M X11 Windowing system. The user is presented with a window co taining six buttons and the short description appropriate for th button (Fig. 1). Selecting the list glyph (the small downward-pointi arrowhead) causes a list of the digits available for that decimal pla to be specified. Each time a selection is made, the program updat the selections in the next lower list. A user thus starts with the t (anatomy) digit and progresses down through the list glyphs until or she has reached the desired level of precision or until the fifth di is reached.

The program also can be used to identify an unknown code. clicking the mouse on the numbered buttons, the user can displa given code, and the description of that code is displayed on t screen to the right. Last, a "pick" button allows the displayed co to be sent to the Unix standard output to be used by another progr in a Unix "pipe."

Having the user interface coded in variant of MIT X11 allows t program to be used from any workstation on the department netwo Even suitably equipped personal computers can display X windov We hope that this rapid method of coding will allow radiologists code more of the daily film load and therefore make these cas available for retrieval according to diagnosis.

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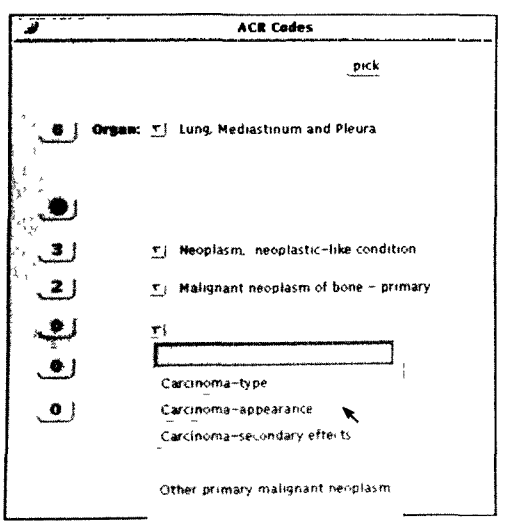

Fig. 1.—Example of a window display in a simple system for retrieving radiologic examinations according to American College of Radiology diagnosis codes.

Radiologic Findings in the Diagnosis of Hughes-Stovin Syndrome

Hughes-Stovin syndrome is the exceedingly rare combinatior pulmonary arterial aneurysms and venous thrombosis [1–4]. Sig and symptoms are cough, dyspnea, hemoptysis, headache, interr tent fever, and papilledema as well as those due to periph phlebothrombosis. The most frequent cause of death is rupture of aneurysm into the pulmonary airways. To our knowledge, fewer th 20 cases have been reported.

A 20-year-old male Romanian refugee with a history of two sodes of hemoptysis in Romania was admitted because of sev hemoptysis. A chest radiograph showed enlarged lower poles of left and right hila (Fig. 1A). Phlebography showed partially thrombo external and common iliac veins bilaterally and an incompletely thr bosed distal infrarenal inferior vena cava. Suprapubic and lum collateral vessels eventually filled the proximal inferior vena ca Pulmonary angiography showed one aneurysm in the right lung two smaller aneurysms in the left lung (Figs. 1B and 1C). aneurysms corresponded to the lesions seen on the chest radiogra All laboratory data, including the results of coagulation studies tests for infectious and autoimmune diseases, were normal.

The obscure cause of the peripheral thrombotic events and cryptic genesis of the pulmonary aneurysms in Hughes-Stovin s