**ER 11.2 *Astrophysical passives***

‘On the use of the passive in two astrophysics journal papers’ is the title of an article written by Tarone *et al.* in 1981, and it does just what the title says. The authors are interested in the use of the passive, as opposed to the active together with the pronoun *we*. When, for example, will an EST writer say *we studied this phenomenon* and when *this phenomenon was studied*? To come to grips with the detail of the issue, Tarone *et al.* focus on just two papers, both on astrophysics.

Many writers, they note, have talked about the high frequency of passive use in scientific writing (as opposed to, say, literary texts). But their study, along with others that they mention, casts some doubt on this. In fact, in both the papers Tarone *at al.* consider, ‘active forms greatly outnumber passive verb forms’. But when, they ask, is *we* is used, and when the passive? They come up with four generalizations. Here are three of them (slightly oversimplified):

Generalization 1 is that when an established or standard procedure is being described, the passive is often preferred. *We* tends to be used when an author’s unique choice of how to do something is being described. Compare these two examples:

(a) *The underlying physics is essentially the same as that of the stationary models above, except that we allow variables to evolve in time on the “drift” (radial flow) time scale . . .*

(b) *Energy is generated locally by viscous heating through action of the shear stress . . ..*

In (a) the author is describing how he decided to proceed, while (b) says how something is normally done.

Generalization 2 is that *we* is used to describe the authors’ own work, while the passive describes the work of others. Here are sentences which mention both. The work of others (described as *the above authors*) is first mentioned, followed by their own contribution: *All of the accretion disk models of the above authors are time-independent. A constant mass flux for the normal star into the disk is assumed. In this paper we develop the theory of time-dependent disks.*

Generalization 3 is that when an author is describing a future study, the passive is used. For example: *Whether such a situation is stable under perturbations will be investigated in Paper II.*

Tarone *et al’s* paper is a good example of the interest given to identifying the characteristics of different writing genres, in the 1980s and beyond.