

QUOTATION

D. L. HULL ON MULTIPLE CONTROL OF SCIENTIFIC BEHAVIOR

As multifarious as science has been and continues to be, a great deal about it can be explained by reference to just three elements: a desire to understand the world in which we live, the allocation of responsibility for one's contributions (both credit and blame), and the mutual checking of these contributions; in short, *curiosity*, *credit*, and *checking*. . . .

Beetles, butterflies, and the magic of numbers have all served to fire curiosity in budding young scientists. Which natural phenomena happen to interest a particular scientist is largely a contingent affair. That scientists are curious is not. It is play behavior carried into adulthood. Once a young scientist is seduced into the profession, this curiosity is sometimes squelched by the tedium of academia, but for those who survive, a second motivation is added to the first—the desire for credit.

Although the desire for credit may not be as admirable as seeking knowledge for its own sake, it is nevertheless a powerful spur to action. . . . None too surprisingly, Zuckerman (1977 . . .) discovered that most successful scientists not only publish a lot but also begin to publish early. It would seem that reinforcement is as effective with scientists as with everyone else.

However, . . . the sort of credit that really matters is *use*. Individual scientists want credit for their contributions, as much credit as possible. Scientists exhibit considerable resistance to many of the observations students of science make of the scientific enterprise, but they readily acknowledge that they crave for recognition, not the recognition of the public at large or even of that amorphous hodgepodge termed the scientific community, but of the few scientists working in their area whom they genuinely, if sometimes grudgingly, respect. . . .

. . . the best thing that one scientist can do for another is to use his or her work, preferably with explicit acknowledgement.

. . . Anyone raised in science is aware that armies of graduate students, not to mention fully accredited professionals, are out there searching the literature for something that they can use in their own research. If they light on your work and it turns out to cost them time and effort, you are in trouble. . . . Scientists are not all that interested in giving other scientists credit when things work out right, but they surely want to know the identities of scientists whose work has led them astray, so that they will not make the same mistake twice. . . . Perhaps attaching one's name to publications encourages vanity and greed for fame, but it also allows the focusing of responsibility, for good or ill. As the system is now constructed, one cannot pursue credit without risking blame; nor can one cite the work of another author in support of one's own research without conferring credit (Grinnell, 1987).

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