sity" or a college. But the same rule—"hire only at the beginning level"—is being increasingly followed, if not mandated, in such institutions as well, and those so hired but not tenured after their probationary years face the same double bind. If we are satisfied to follow Shull's advice, statistically and institutionally the tenure problem may indeed just go away; but the price will be high in terms of wasted human resources—those who find themselves, in Matthew Arnold's phrase, "Wandering between two worlds, one dead,/ The other powerless to be born."

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Green's "Catch-22" problem is very real indeed. There is no instant solution to the problem of the mismatch between expectations of individuals who fail to receive tenure and the reality of the marketplace. I happen to believe that it is much more important for society to preserve the very best of our research institutions for the benefit of future generations of students, even if at the expense of failing to meet the expectations of deserving individuals caught in the present dilemma. It is not all bad, however, for these individuals to move out into a broader marketplace. Society needs well-educated individuals far beyond the narrow scope of the academic profession. The expectations of individuals and the demands of society for educated individuals must be broadened in the future to provide a better match.

Grodzins' statistics are impressive, probably mostly correct, but not completely relevant. He mixes two separable problems, each important in its own right. I was clearly writing about the "tenure problem" in research universities. Grodzins is writing about the employment problem in a wider context of institutions and fields beyond these. The two viewpoints are not coincident. It is important to dispose of the tenure problem in these research institutions (but not by doing away with tenure). This can be accomplished even while employment prospects in the larger picture remain unsatisfactory. With respect to Grodzins' third paragraph and quotation, simple arithmetic shows that, on the basis of an even distribution of age, one expects about 20 percent of faculty (that is, 7 years out of, say, 35) to have 7 or fewer years' experience. The decrease in observed percentage of young faculty is still commensurate with my estimate that new hiring is already back at the rate required for an even-age distribution, and probably somewhat above that. If hiring continues at this rate, and if new appointments are predominantly at the beginning career level, retirements in the years ahead will reduce the tenure fraction in due time. The situation is not ideal, but it is far from being desperate.

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Writing Posture and Paper Orientation

Levy and Reid (Reports, 15 Oct. 1976, p. 337) show that cerebral lateralization (determined by tachistoscopic tests) can be predicted by hand orientation in writing. Although not the primary focus of their report, it is pointed out by the authors that inverted writing posture is not a learned adaptation to the difficulty of writing from left to right with the left hand. There is, however, another basis for the notion that inverted writing posture is a learned rather than a biologically determined response. As Levy and Reid represent the situation in their figure 1 (reproduced here), inverted writing posture covaries with the orientation of the writing paper. When the vertical axis of the paper is parallel to the long axis of the writing arm, the normal posture is used. When the two axes are nonparallel (when the paper is rotated counterclockwise from vertical by left-handed writers), the inverted posture is used. It is this sinistral writer's experience that beginning writers, regardless of hand preference, are instructed to position their writing paper in the orientation used by normal dextrals (see Fig. 1). The inverted writing posture may be an adaptation by sinistrals to the orientation of their writing paper.

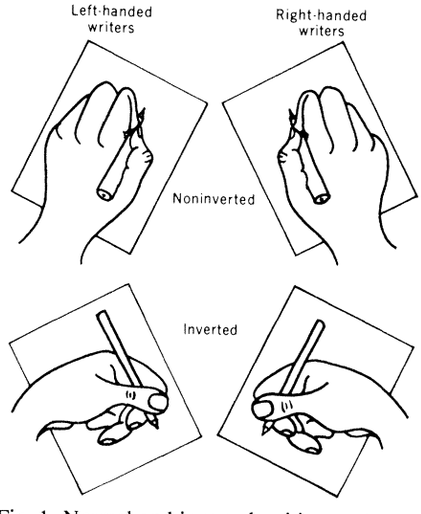

Fig. 1. Normal and inverted writing postures in left- and right-handed writers and the paper orientation adopted by each (as shown in report by J. Levy and M. Reid, 15 Oct. 1976, p. 337).

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Hemmes' comment can be answered by a consideration of some pertinent facts. First, our original results have now been completely confirmed by Reid in 5- and 8-year-old children by means of two entirely different tests of hemispheric lateralization. Further, the human brain is functionally, physiologically (as indicated by electroencephalograms), and anatomically laterally differentiated in human infants at birth, and behavioral asymmetries observed at this time are predictive of handedness at age 10. Also, the neurological literature over the last 50 years leaves no doubt that left-handed writers are a mixed population, some having language functions localized in the left hemisphere and some in the right, some having strong cerebral lateralization and some having weak.

Our research merely revealed that these variations among left-handed writers can be indexed quite accurately by the hand posture variable (also among right-handed writers, although only a small fraction of the latter have language functions in the right hemisphere). Some fraction of adults who used the inverted posture as children come to adopt the noninverted posture at a later time, due either to pressure from parents and teachers or to their own decision from observing how the majority of people write.

In young children (ages 5 and 6) who are classmates with the same teacher instructing them in hand posture, some sinistrals adopt the inverted posture and others adopt the noninverted posture. One of these groups of children simply reorients the paper appropriately. Also, we have observed approximately 30 right-handed writers who use the inverted posture, and these cannot be accounted for on the basis of improper paper orientation, since they are, after all, right-handed.

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