

ated from a first-rate, recognized university program and not from the unapproved schools. Although the grandfather clause was written in order to include graduates of these unapproved schools, it seems inconsistent and unconscionable to exclude graduates of approved universities.

This licensing committee has been able to keep previous questionable behavior from general knowledge. For example, all past and present state association board members who could be contacted were unaware of reopenings of certification grandfathering periods. The committee did not assure themselves that their colleagues were informed by announcements in the state association newsletter. Unfortunately, many other qualified psychologists simply have given up trying to correct these abuses because of the time and expense and for fear of retaliation.

State psychology licensing committees should be accountable to the public and to the profession. Yet, the experiences just described are indicative of situations that are dangerous to the public interest and to the profession. Public exposure would surely correct the situation but risk widespread and undeserved criticism of the entire profession. The abusive behavior of some state licensing committees indicates very serious legal and ethical defects that need correcting by a system of accountability to all sectors of the professional spectrum. I should be interested in hearing from my colleagues with respect to suggestions that could eliminate or reduce these continuing abuses.

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M. W. BUTTIGLIERI
17119 Barneston Street
Granada Hills, California

Hebb's Confusion about Heritability

D. O. Hebb's (1970) criticism of the concept of heritability and the example he gives to illustrate his point can only confuse those readers who do not already understand this concept.

Heritability (h^2) refers to the proportion of population variance in some particular characteristic (e.g., IQ) attributable to genetic factors. ($1 - h^2$ is therefore the proportion of variance attributable to nongenetic factors, that is, environment and measurement error.)

Hebb argues that "the amount of variance attributable to heredity (or to environment) cannot show how

important heredity (or environment) is in determining an aspect of behavior." How can this be so when h^2 is specifically intended to provide a quantitative answer to just this question of the relative importance of genetic and nongenetic factors in trait variance? Hebb gives as an example of his argument the proposal of Mark Twain that "boys should be raised in barrels to the age of 12 and fed through the bung hole." So suppose, going along with Hebb, that 100 boys are reared in this way, in practically uniform environments for all of them. Here is Hebb's clincher:

Jensen agrees that environment has *some* importance (20% worth?), so we must expect that the boys on emerging from the barrels will have a mean IQ well below 100. However, the variance attributable to the environment is practically zero, so on the "analysis of variance" argument, the environment is not a factor in the low level of IQ, which is nonsense.

Nonsense it certainly is. But it is Hebb's nonsense and not the fault of heritability. No one who understands heritability would make this fallacious argument.

Here is where Hebb goes wrong: He is confused about the population in which he should determine the heritability needed to answer the question in which he seems most interested, namely, the low IQs of the barrel-reared boys. If we wish to know the heritability of IQ among the population of boys reared in barrels, then our study is confined to this population (or a sample from it), and the obtained value of h^2 tells us just what we want to know: the proportion of IQ variance attributable to genetic factors *in this population*. The estimate of h^2 would probably be very high (assuming we could measure the IQ) because of the uniformity of environments. The question here does not concern the *mean* IQ of this population. But if we go on to compare the mean IQ of this population (i.e., boys in barrels) with the mean IQ of 100 for boys reared in an ordinary home environment, as Hebb does, we shall need a *different* determination of heritability, because now the population we are talking about includes boys reared in barrels *and* boys reared in homes. As is often done in heritability studies, we could use monozygotic twins, and rear one-third of the twin pairs in ordinary homes, one-third in barrels, and one-third would be separated, with one member of each pair reared in a barrel and the other in a home. An analysis of variance would yield the proportions of IQ variance in this population that are attributable to variation between twin pairs and within twin pairs *within* barrels and *within* homes, and to the variation *between* barrels versus homes. In a population with such heterogeneous environments, consisting of homes and barrels, we should expect the value of h^2 to be comparatively small, reflecting the greater variance due to the extreme environmental variation. Thus, the heritability analysis

would perform precisely the job that it was devised to do by population geneticists. Nothing more is claimed for it. The fact that Hebb can misapply heritability and arrive at a nonsensical conclusion by estimating h^2 in one population (boys in barrels) and then wrongly generalizing it to a quite different population (made up of boys in barrels and boys in homes), only proves that Hebb is confused about heritability. It proves nothing against the geneticists' concept of heritability, which remains a valid and useful technique for analyzing the sources of variance in a population.

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ARTHUR R. JENSEN
Institute of Human Learning
University of California
at Berkeley

Effects of Campus Tensions on Mental Health

The American Council on Education, Special Committee Report on Campus Tensions (1970) stated that after a student protest was over, the universities retained their essential characters. This statement did not refer to the individual members of the university community. What about the students, faculty members, and administrators who became mentally or physically ill because of campus tensions?

In my investigation of the effects of campus tension at several disrupted institutions, the general impression was that appointments increased at the counseling services. Students had a generalized increase in anxiety, depression, difficulty in coping, and general fears which reduced their ability to concentrate on their academic work or to enjoy it. There was agreement that the pressures were great.

Conversations with occasional student protestors revealed that the price for involvement in dissent was psychologically very high. The pressures were great to produce new issues and keep the group active. They began to question whether they could continue their participation and keep a reasonable hold on their status as students. Strategy meetings lasted well into the night and began early the next day. Writing material for distribution, reproducing it, making posters, collecting bail money, etc., were all time-consuming activities. Which would it be, continued acceptance by their dissenting peers or pursuance of degree requirements? It became an approach-avoidance conflict that resulted in some psychotic episodes, and hospitalization.

What about students who did not get directly involved? Many were very disturbed about the disruption of educational activities. They may have agreed with some of the protestors' demands, but disagreed with their tactics. They became frustrated because they seemed powerless in stopping the dissenters. A certain disenchantment with the educational process was expressed. Anxiety increased, and some suffered a temporary inability to complete class assignments. Neurotic depression developed with a loss of appetite, insomnia, etc.

The pressure was equally great on faculty members. One American Council on Education study indicated that faculty members were involved in planning more than half the recent protests (Boruch, 1969). Some were former student activists who continued their involvement after becoming instructors. Other faculty members became involved because of class disruptions, discussions regarding institutional policies, or the need to help keep order.

Whether they actively sought protest or not, most faculty members did feel some involvement when the institution was challenged. Extensive meetings were held, even though the regular class schedule had to be met. Some faculty members and administrators reached a stage of exhaustion. Their families were concerned for their safety and well-being. A number suffered mental breakdowns, heart attacks, or acute attacks of chronic disorders.

In the heat of the controversies, little attention was given to the clerical, security, and maintenance staffs. They too responded to the tension and expressed feelings of anxiety, fear, and/or hostility. If a university were closed by demonstrations, the nonprofessionals could lose wages essential to the support of their families.

If individual members of the university communities had been questioned about the effect of campus tension on their lives, the answer would be that they were greatly affected. The unanswerable question for the university communities is how much anxiety, pressure, hostility, and chaos can each person tolerate before a mental or physical breakdown occurs.

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ALVCE E. PASCA
Roosevelt University