

A Case for Genetic Drinking

by Patricia McBroom

Alcoholism has been blamed variously on poverty, a bad home, a weak personality, a drinking job, an iodine deficiency, abnormal sugar metabolism and a defect caused by drinking parents who damaged their germ cells.

It has also been blamed on genetics.

But scientific evidence for a genetic element in overdrinking has been slight and contradictory, primarily because the research is so hard to do. "Drinking genes" have never been isolated and the research depends on the study of habits and patterns of identical twins, who are not only hard to find, but once found, require very sophisticated analysis.

Such an analysis, done in Finland, was released in this country last week. It establishes that among Finns, at least, drinking habits seem to be inheritable.

Whether one drinks at all, how much and how often are partly due to heredity reported Juha Partanen, Kettil Bruun and Touko Markkanen of the Finnish Foundation for Alcohol Studies in a 140-page report titled "Inheritance of Drinking Behavior."

If alcoholism is defined in these terms, rather than by a legal definition, then a genetic element in alcoholism "seems highly plausible," they said.

The Finns have based their data on 902 male twins, roughly half those born in Finland between the years 1920 and 1929. A complex interweaving of the drinking habits, personalities, intelligence and arrest rates of identical twins, as compared to fraternal twins, pointed to the genetic factor.

Identical twins have the same genes; they differ only because of environment. Fraternal twins differ both by inheritance and environment. After leveling out the "environment," whatever contrasts remain are theoretically due to heredity.

Heredity significantly affects how much an individual drinks on any one occasion and how often he imbibes, reported the Finns. Surprisingly, genes

also have much to do with creating an abstainer, they said.

The frequency of drinking is much more sensitive to social influences than is the amount drunk. Amount is, in fact, the drinking habit most immune to the effects of environment and is therefore the most stable reflection of heredity. These results, however, are valid so far only for non-addictive drinking.

A confusing category called "lack of control" did not seem to be inheritable, but when analyzed together with amounts normally drunk at one sitting, the highest genetic factor of all was obtained. This may indicate, said the Finns, that lack of control—which should resemble alcoholism—is no single gene, but a group of traits.

Moreover, when the twins were separated by age, the younger group did show a genetic factor in their control over drinking, implying that age and experience gradually blur the sharp edges of heredity.

The Finns were never able to distinguish a clearcut group of alcoholics, partly because the amounts of alcohol studied were not excessive. Individuals were classified as heavy users if they exceeded 7.5 cl absolute alcohol per drinking occasion—about four shots in U.S. terms. Also alcoholics were probably underrepresented in the sample, since many twins who could not be reached had "addresses unknown."

Interestingly enough, the Finns found only a weak link between inherited personality traits and drinking habits, strengthening the idea that alcoholism may be independently inherited.

In fact, of the four traits they measured, only sociability turned out to be strongly inherited. The need for achievement, neuroticism and aggressiveness did not.

Ranking everything by genetic strength, intelligence came first, then sociability, then the frequency and amount of drinking. All other personal traits measured fell far below these four reported the researchers.

One-sixth of their sample had been arrested for drunkenness, said the Finns, which only points up the rigid controls operating in that country. Drinking is not a part of daily life in Finland—legal controls are strong and alcohol is difficult to obtain in rural areas. Consequently, Finnish men (the women do not drink often) make a

special occasion of tipping on the weekends, when many try for a measure of inebriation.

Probably for these reasons, the study found absolutely no correlation between arrest rates for drunkenness and inheritance; nor did it find a link between alcoholism as officially defined in Finland and genes.

But, "hereditary differences between individuals exist in all variables describing drinking behavior," wrote the scientists. "Should one drink or abstain? How often and how much to drink? These are decisions determined not only by environment but also by heredity."

Just what the genetic mechanism is remains a mystery. The Finns suggested, however, that studies of metabolism, particularly sugar metabolism, may eventually provide an answer.

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