JAIL BULLETIN

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The Jail Bulletin is a monthly feature of the Crime Commission Update. The Bulletin may be used as a supplement to your jail in-service training program if officers study the material and complete the attached "open book" quiz. The Bulletin and quiz may be reproduced for use by your staff. We welcome any jail training material you would like to contribute to the Bulletin.

BIOLOGY AND CRIME

From the earliest times, it has been believed that appearance reveals character. Over 2,000 years ago, the Greek philosopher, Socrates, was charged by his enemies with having a face that showed brutality. In his time, there were "physiognomists," readers of faces. Later on, there were also "phrenologists," readers of head shapes. Readers of palms can still be found in the Yellow Pages of many American cities. In William Shakespeare's "Julius Caesar," the sly conspirator, Cassius, "has a lean and hungry look. . .such men are dangerous." In Robert Louis Stevenson's Victorian fantasy, Dr. Jekyll, a respectable, handsome doctor, destroyed himself by indulging too often in a chemical concoction that transformed him into diabolical, remorseless Mr. Hyde. Mr. Hyde was, and looked, evil - "pale and dwarfish. . .hardly human. . .troglodytic." The spirit of celebration--Santa Claus or Bacchus, the Roman god of wine--is pictured as rotund; the spirit of nationalism--our Uncle Sam or England's John Bull--as wiry or muscular. The word "character" almost tells its own story, meaning both a physical sign (as in characters of an alphabet) and a psychological disposition.

It is not hard to see why, despite its ancient vintage, the belief in physical marks of character is rejected by most educated people. What hard scientific evidence there is of such visible signs suggests that they are too minor and unreliable to be useful. As a practical matter, it is sound not to judge a book by its cover and to recognize that beauty is only skin deep. Right or wrong, the belief in physical signs risks intolerance, superficiality, and quackery. Judging people by how they look is not only likely to be inaccurate, it is unfair.

So why begin this commentary with an idea whose time has evidently passed? The answer is that it is important for conceptual, if not practical, reasons. For criminal behavior, as for many other kinds of significant human behavior, it is likely that how people behave bears some relation to their biological constitutions.

Research on Body Types and Physique

In the 1930's, Earnest A. Hooton, an American anthropologist, compared standard physical measurements of over 10,000 male prisoners with those of noncriminals of corresponding ages and ethnic ancestries, and from corresponding regions of the country. Hooton discovered that criminals were, on the average, physically distinctive in small but statistically significant ways. In some samples, he also found small physical differences between groups of criminals convicted for different crimes. The physical correlates were things like particular ear shapes or eye colors or relative sizes of parts of the body or hair distributions--all in all, minor attributes that had no clear or obvious connection to crime besides the correlation itself.

What mattered to Hooton was not what the physical correlates of crime were so much as that there were correlates at all. From his evidence that criminals were physically distinctive, Hooton argued for a biological susceptibility to crime that also happened to show up in otherwise irrelevant physical characteristics, such as the shape of one's ear. The physical correlate was, then, a form of evidence, albeit indirect, of biological involvement in the tendency to break the law.

More such evidence began to accumulate in the 1940's, after William H. Sheldon, a physician, developed a new system for classifying human physique. A person's body build, in this system, is represented by three numbers for the three "dimensions" of physique--that is, endomorphy (soft, round), mesomorphy (large boned, muscular), and ectomorphy (linear, fragile). Each dimension is assigned a score on a 7-point scale (4 being the midpoint); the value for any individual is derived from objective measurements of the body, ideally after adjustments for age, health, and nutritional status.

Several studies, by Sheldon and by others, reported male and female offenders to be more mesomorphic and less ectomorphic, on the average, than nonoffenders who were matched for age, IQ, socioeconomic status, or ethnic ancestry. A small amount of evidence suggests that criminal recidivists have more atypical physiques (even more mesomorphy and less ectomorphy) than criminals in general. The third dimension, endomorphy, does not reliably correlate with criminal behavior. Not everyone who has high mesomorphy and low ectomorphy commits crimes, or vice versa. Indeed, it is likely that other pursuits besides crime attract the same sorts of body builds.

Physique, as measured in Sheldon's system, is a constitutional variable, not greatly affected by environment or experience, hence likely to be dependent on one's genes. Its correlation with criminal behavior implies that criminal tendencies involve genes to some extent. Sheldon and others have found that physique is correlated, although imperfectly, with personality and temperament. The mesomorphic component is typically associated with, among other traits, high activity levels, restlessness, a craving for adventure and danger, and aggressiveness; the ectomorphic component, with introspectiveness, self-consciousness, inhibition, rich inner psychic experience, and a capacity for delayed gratification. Mesomorphy unleavened by ectomorphy is therefore likely to be accompanied by a taste for uninhibited, aggressive excitement and by deficits in internal feelings and forbearance. As is described below, just such a combination of personality traits has been directly associated with criminal tendencies.

Research on Chromosomes

Modern biology provides more direct methods than the measurement of physiques or faces for deciding whether a psychological tendency has constitutional foundations. For example, a particular abnormality of the chromosomes has been disproportionately found among male criminals. Gender and gender characteristics are determined by 1 of the 23 pairs of chromosomes that contain the human genetic endowment. For genetically normal females, the sex-determining pair consists of two ordinary-sized chromosomes, called XX because of their microscopic appearance. Males normally have an XY pair instead, of which one of the chromosomes (the Y) is smaller. For less than 1/10 of 1 percent of the male population, however, there is an extra Y, so that instead of a sex-determining pair, there is a sex-determining triplet of chromosomes, XYY. The extra Y chromosome turns up unpredictably in any social class or ethnic group or family setting. Such men are taller than average and have other minor physical characteristics. They also have a 10 to 20 times greater tendency to break the law than to genetically normal men from comparable populations.

Even with their elevated criminal tendencies, there are too few XYY men to affect overall crime rates much. However, they again illustrate the power of genetic influences on offending, for any effect on behavior of the extra chromosomes is genetic by definition. Some, but evidently not all, of the elevated risk of criminal behavior among XYY males has been traced to the lower IQ scores they have been shown to have. The implication that IQ scores are to a degree controlled by genes and correlated with crime is briefly discussed below.

Research on Twins and Adoptions

Another approach to the biological basis of criminality is to compare identical and fraternal twins. Identical twins, arising as they do from a single fertilized ovum, share identical genes. Fraternal twins arise from two fertilized ova, and they have the same genetic overlap as ordinary sisters and brothers. Traits for which identical twins are more similar than fraternal twins are likely to involve genes. Familiar examples are height, weight, and general appearance, each of which is typically more similar for identical twins. From the results of about a dozen studies in Europe, Asia, and the United States, criminality can be added to the list. An identical, as contrasted with a fraternal, twin with a criminal record implies approximately twice the likelihood of a co-twin with a record, too. Identical twins are also more alike than fraternal twins in the frequency of criminal behavior they admit to in anonymous questionnaires. The differential resemblance of identical and fraternal twins is generally considered to be strong, though not by itself conclusive, evidence of genetic involvement in criminal behavior.

The main other source of evidence comes from studies of children adopted early in life and of their biological and adopting parents. For example, the criminal convictions among a sample of more than 4,000 Danish adopted boys were more dependent on their biological, as compared to their adoptive, parents' criminality. The more serious an offender a biological parent was,

the greater the risk of criminality for his or her child, particularly for property crimes. Adopted boys who had a chronically criminal biological parent (three or more convictions) were three times more likely to become criminal than those whose biological parents were not criminal. The risk for the child depended neither on whether the child or the adopting parents knew about the biological parents' criminal records nor on whether the biological parents committed their crimes before or after the child was adopted. Swedish and American studies have confirmed the main conclusions and have extended them to female adopted children.

The bits of evidence may be individually disputed but, taken together, the case for some genetic involvement in criminal behavior cannot plausibly be rejected. On the average, offenders are distinctive in physical constitution, they are more likely to have chromosomal abnormality, and they tend to occur in families with other offenders whether or not they were raised by their criminal relatives. Unwholesome environments are surely among the significant predictors of crime; they are just not the only predictors. But genes do not cause crime as such. Rather, the evidence suggests a more complex chain of connections: genes affect psychological traits which in turn affect the likelihood of breaking the law. Intelligence and personality are the two traits most strongly implicated in this chain.

Research on IQ

Many studies have shown that the offender population has an average IQ of about 91-93, compared to the average IQ of 100 for the population at large. Since the general population includes an unknown fraction of offenders, the IQ gap between offenders and nonoffenders can only be estimated, but a conservative value is about 10 points. Different categories of offenders have different average IQ's, some even lower and some higher than 91-93. In general, however, the common offenses--the impulsive violent crimes and the opportunistic property crimes--are most often committed by people in the low normal and borderline retarded range.

Since test scores and crime rates are both correlated with socioeconomic status, it is sometimes suggested that status, rather than test score, is the critical variable in explaining criminal behavior. But the evidence says otherwise. At each socioeconomic level, offenders tend to have the lower IQ test scores; among people with the same scores, people from lower socioeconomic levels commit more crime. Thus, both cognitive ability (intelligence) and socioeconomic status (environment) contribute to the likelihood of criminal behavior, and there is some reason for concluding that ability contributes more.

IQ test items call on cognitive abilities of various sorts, each of which can be described as verbal or nonverbal. A vocabulary test is obviously verbal; a test of speed and accuracy in assembling the pieces of a jigsaw puzzle is nonverbal. Spatial reasoning is nonverbal; arithmetic reasoning is usually considered verbal. Tests are usually constructed so that the average person has equal verbal and nonverbal scores, but offenders

average lower verbal than nonverbal scores. Even among groups of offenders and nonoffenders matched for age, overall IQ, ethnic background, and socioeconomic status, offenders have lower verbal scores than nonoffenders (and higher nonverbal scores, so as to equalize overall scores for the two groups). Low verbal scores may create a risk for criminal behavior because they impair a person's ability to formulate and follow internal standards of conduct, or because they lead to failure and frustration in school and on the job, or for all those reasons.

A large scientific literature indicates that the abilities measured by IQ tests are partly genetic. Verbal abilities are at least as heritable as nonverbal. The IQ's of children raised in foster homes correlate more closely with those of their biological parents than with their foster parents'. Identical twins have more similar IQ's than fraternal twins. In general, people who are more closely related by blood have more similar test scores. Estimates of the heritability of intelligence, by serious students of the subject, range from about 40 percent to 80 percent. This does not mean that intelligence is immune to influence by the environment, but it helps explain the evidence for an inherited biological factor in criminal behavior. Since crime correlates with IQ, and IQ is partly inherited, a heritable susceptibility to criminal behavior follows.

Research on Personality

Personality is a similar matter. Many studies have found that the average offender is distinctive, though not necessarily abnormal. He or she is likely to be impulsive, deficient in internal psychic experience and in emotional attachments to other people, mendacious, aggressive, unconventional, fatalistic--if not indifferent--about the future, drawn to adventure or danger, and emotionally disturbed or frankly psychotic. When these traits are sufficiently extreme, offenders are said to suffer from a psychiatric condition called "antisocial personality." Not every offender is atypical in personality, but in large samples, the signs of atypicality are undeniable.

Like intelligence, personality has a heritable component, although probably not to the same degree. The evidence on the heritability of personality is not as clearcut as that on intelligence, for several reasons. There has been less research on it. The measurement of personality has not been as well standardized. Personality is probably even more multifaceted than intelligence, and different aspects of it may have different heritabilities. Even so, we may conclude that the inheritance of personality traits is one of the ways in which the susceptibility to criminal behavior is transmitted by the genes.

Material From:
"Crime File, Biology and Crime"
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QUIZ

Nebraska Jail Standards require that jail staff receive eighteen (18) hours of in-service training each year. The Jail Bulletin may be used to supplement in-service training if an officer studies the Bulletin, completes the quiz, and this process is documented by the jail administrator for review during annual jail inspections.

SUBJECT: BIOLOGY AND CRIME

NAME _____

DATE _____

1. A phrenologist reads _____

2. William H. Sheldon would probably say Superman was an example of:

   A. Endomorphy

   B. Mesomorphy

   C. Ectomorphy

3. There are too few men with XYY chromosomes to affect overall crime rates much.

   TRUE _____ FALSE _____

4. Studies of twins and adoptions indicate that children whose biological parents are serious criminal offenders are more likely to become criminals themselves.

   TRUE _____ FALSE _____

5. The IQ gap between offenders and nonoffenders can be estimated at about _____ points.

6. The inheritance of personality traits is one of the ways in which the susceptibility to criminal behavior is transmitted by the genes.

   TRUE _____ FALSE _____

CREDIT: 1/2 HOUR CREDIT FOR JAIL INSERVICE TRAINING REQUIREMENT

ANSWER SHEET SHOULD BE RETAINED BY JAIL ADMINISTRATOR OR TRAINING OFFICER

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2. William H. Sheldon would probably say Superman was an example of:

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   (B.) Mesomorphy

   C. Ectomorphy

3. There are too few men with XYY chromosomes to affect overall crime rates much.

   TRUE XX FALSE _____

4. Studies of twins and adoptions indicate that children whose biological parents are serious criminal offenders are more likely to become criminals themselves.

   TRUE XX FALSE _____

5. The IQ gap between offenders and nonoffenders can be estimated at about 10 points.

6. The inheritance of personality traits is one of the ways in which the susceptibility to criminal behavior is transmitted by the genes.

   TRUE XX FALSE _____

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