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**an alternative approach  
to the aetiology of crime**

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AN ALTERNATIVE APPROACH TO THE  
AETIOLOGY OF CRIME

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## INTRODUCTION

It is sometimes said that the roots of many sciences can be found in the work of Aristotle. It is difficult to say whether this holds true for criminology. If we look at criminology as an empirical science it might be more correct to locate its beginnings with the famous Italian criminologist Lombroso, who made a considerable effort to increase our understanding of the origins of crime.

In his early years Lombroso tried to explain crime by referring almost exclusively to the physical traits of the offenders. Only in his later publications did Lombroso pay more attention to the possible relevance of social factors. Since Lombroso, many scholars have approached the crime problem, be it from different angles; this has led to the creation of different schools of criminology, such as the anthropological, sociological, ecological, psycho-analytical, biological and, more recently, Marxist schools.

The common factor in most of these schools is that they look at the crime problem in an unidisciplinary way. This is not to say of course that there have been no attempts to study crime in a multidisciplinary way. Studies like those of the Gluecks<sup>1)</sup>, Cohen's theory<sup>2)</sup> to explain lower-class gang behaviour, and the research carried out by Ferracuti, Dinitz and Acosta de Brenes in Puerto Rico<sup>3)</sup> are just a few examples to the contrary. Unfortunately the multidisciplinary approach is more the exception than the rule.

### Crime as behaviour

All theories of criminology should proceed from the assumption that crime is behaviour.

Two important consequences result from this supposition: first, there is a need for a differential criminology and second, to explain criminality, the criminologist must adopt a behavioural approach. In what follows, I shall consider both these points.

### The need for a differential criminology

The criminologist has to deal with such diverse behaviour as drug abuse, drunken driving, shoplifting, white collar crime, burglary, vandalism, armed robbery, sexual offences, murder, bribery and violence. In view of this it is surprising to see that crime is discussed in such general terms. This approach is reflected in many of the existing theories of criminology, which are often non-specific and claim thereby to have a general validity. Eysenck<sup>4)</sup>, for instance, considers that criminality is the result of bad conditioning, while Merton<sup>5)</sup> finds the explanation for criminal behaviour in the fact that our society creates all sorts of needs, but does not provide everyone with equal means of satisfying these needs within the law. Others such as Cohen<sup>2)</sup> look for the answer in the class system, or as Taylor<sup>6)</sup>, in the structure of society. And so one can go on.

But although all these theories differ one from the other, they have one thing in common: each of them claims to explain criminality -that is *all* criminality- neglecting the fact that crime is such a heterogeneous phenomenon; a second thing they have in common is that hardly any empirical evidence is usually presented to support the theory. To obtain a better understanding of criminal behaviour it is essential to study more homogeneous groups.

What criteria should be used to arrive at more homogeneous subcategories of offenders? One criterion should be obvious by now: the kind of offence committed.

Although this would certainly help to achieve greater homogeneity, a group selected in this way would still be too heterogeneous in my opinion to allow an adequate theory to be built up.

An example may help to make this clear. Suppose that we are studying a group of violent delinquents. The significance of their behaviour will vary according to a number of factors:

- the social class of the criminal: the lower social classes have different opinions, after all, on the acceptability of violence as a means of settling disputes than the higher social classes;
- the age of the criminal: the use of violence is more "normal" during adolescence than, for example, after the age of thirty;
- the sex of the criminal: violence by women is more likely to require a different explanation than violence by men;
- whether the act was committed alone or with others: it is an accepted fact that the causes underlying group violence are different from those underlying individual violence.

If no account is taken of these factors when studying violent delinquents one runs the risk that the highest common denominator which can be found to explain their behaviour will be a far from accurate reflection of the true state of affairs. What is true of crimes of violence is true of other crimes as well. Clearly, the greater the variety of crimes studied the vaguer and more generalised will be any cause which is common to them all. It is only possible to identify more specific causes when one works with a more homogeneous group.

For instance, according to Christiansen <sup>7)</sup> the impact of genetic factors is greater in more serious crimes, in women and in the higher social classes. In practice this means that subgroups must be formed as already indicated. The variables listed above (age, social class, sex, etc.) are important in this respect. Each of them can be applied as a criterion to increase the homogeneity of the group being studied and thereby to improve the accuracy of the theory. Another possible criterion is the degree of recidivism or the extent of urbanisation <sup>7)</sup>.

Quite obviously, there may be other criteria that are important like the degree of professionalism of the offender and these should be selected in accordance with the type of crime being studied.

### Relevance of the proposed criteria

In the previous paragraph the importance of working with more homogeneous groups was stressed. In this section I will present some evidence to support the relevance of the proposed criteria. Before doing so I would like to emphasize that creating subcategories of offenders is not the same as proposing a typology of delinquents. Typologies imply a theory. What we propose is to *classify* offenders in order to arrive at more valid theories about the origins of crime. In this respect classifying should be seen as a means to an end. Its relevance depends on the extent to which we are successful in reaching our aim: developing theories which are better able to explain the behaviour of the offenders concerned. As such it is a pragmatic approach: some classifications might prove to be useful, others not. Here too the proof of the pudding is in the eating. Unfortunately, up to now there has not been much willingness among criminologists, either to "cook" or to "taste". By representing some relevant data it is hoped to increase the appetite of criminologists for this.

### Criminal behaviour as a criterion

Probably one of the most disputed criteria for classifying offenders is the kind of offence committed. Many respectable criminologists like Korn and McCorkle<sup>8)</sup>, Clinard and Quinney<sup>9)</sup>, are opposed to this method of classification. Arguments brought forward against legal classifications are, according to the latter writers:

1. They tell us nothing about the person and the circumstances associated with the offence, nor do they consider the social context of the criminal.
2. They create a false impression of specialization by implying that criminals confine themselves to the kind of crime for which they happen to be caught or convicted.
3. Because the legal definition of a criminal act varies according to time and place, the legal classification of crime presents problems for comparative analyses.
4. Legal classifications do not identify theoretical significant types.

In another article <sup>10)</sup> I have shown that these objections are open to criticism. In the same article the results of a comprehensive study were presented to show that, contrary to Clinard's and Quinney's opinion, juvenile delinquents indeed exhibit a statistically significant tendency to confine themselves to specific offences. It was found, for example, that among recidivists the observed distribution of subsequent offences differed significantly from a chance distribution. Or to put it in a more concrete way: if a juvenile delinquent "started" his criminal career with a violent offence the observed number of subsequent violent offences on his criminal record differed significantly from the number that would be expected. This does not mean of course that juvenile recidivists have completely homogeneous criminal records, nor that there are no juveniles with heterogeneous criminal records. On the contrary, in the study it was found that 5% of our offenders had committed a completely heterogeneous set of offences.

In view of our pragmatic approach to the classification problem there is nothing against regarding these too as a specific group or type, worthy of separate study.

There is another comment I would like to make about legal classifications. For our purpose criminal records should not be examined too rigidly. Two possible approaches can be distinguished. First we have the statistical approach: on the basis of probability statistics we ascertain whether the criminal record of a recidivist allows us to label him as a specific type of offender. It is important here to determine the probability of each offence's occurrence. For instance, if an offender has committed 2 sexual offences and three economic offences, we will call him a sexual offender, as the probability of finding two sexual offences in a list of five offences is considerably lower than that of finding three cases of theft in such a list.

The second approach to identifying types of offenders on the basis of a legal classification is the clinical one. This approach is characterized by a kind of psycho-criminological analyses of criminal records. If, for instance, a list of offences of a recidivist consists of two convictions for drug abuse and three for theft we should label the offender concerned as a drug abuser, since we should assume that the thefts probably have to be explained as a way of getting the money to

buy drugs. For similar reasons a combination of drug abuse and prostitution would be identified as representing the drug-abuse type. Of course this way of classifying offenders is a rather subjective one, certainly compared to the first approach we suggested. However, for our purposes it might be useful.

We have argued above that one of the objections of Clinard and Quinney to legalistic classifications does not apply to the situation in the Netherlands: in our research we were able to identify a kind of specialization among juvenile recidivists. A second objection of Clinard and Quinney was that legal classifications do not identify theoretical significant types. Research in the Netherlands contradicts this statement too. For instance this author<sup>11)</sup> found many statistically significant differences in an empirical study in which he compared juveniles repeatedly convicted for theft with juveniles involved in violence (hooligans). This study illustrates that classifying offenders according to their behaviour can be very revealing from a theoretical point of view and useful for prevention.

#### Age as a criterion

As we have said before, offenders form a very heterogeneous group, not only with regard to the crimes committed: heterogeneity is also caused by a difference in the ages of offenders. This well-known fact has led to a distinction between juvenile criminology and the criminology of adult offenders.

Unfortunately this distinction has not been worked out very systematically. Yet we believe that from the aetiological point of view age is an important factor. In this respect it might be interesting to report the results of a study of unreported crime, carried out in the Netherlands<sup>12)</sup>. In this project the relationship between age and crime nuisance in seven different types of offence was examined. The sample consisted of subjects aged from 16 to 28, each age-group containing 100 subjects. All subjects were asked to report to what extent they had committed shoplifting, violence, vandalism, sexual offences, etc. during the past year. Among

other things it was found that the percentage of subjects in each age-group committing offences like shoplifting and vandalism decreased steadily after reaching its maximum at about 17 years. This means that while it is quite normal from the statistical point of view to commit shoplifting at 17, it is abnormal to behave in that way at the age of 28. This makes it all the more likely that we could increase our understanding of shoplifting by taking into consideration the age of the offender. The same applies to offences like vandalism, violence and drunken driving.

That it is important indeed to differentiate between age-groups has been shown by the Canadian psychiatrist Bruno Cormier<sup>13)</sup>. He compared offenders in their twenties with those in their thirties, forties and fifties and found great differences. For instance, those in their twenties were rarely "lone operators", many of them showing serious personal and social problems and an anti-social attitude, committing crime as an act of rebellion against society.

Those who became first offenders in their thirties were rarely rebels with basic anti-social attitudes. Their problems were often connected with unhappy marriages or with sexual disappointments. Finally loneliness, physical and emotional deterioration, according to Cormier, are characteristics of those who become first offenders in their fifties.

In short, since changes take place in the social position of the human being as in his biological system as they grow older, it is important -in explaining crime- to differentiate between age-groups.

#### Social class as a criterion

The concept of social class plays an important role in the aetiology of crime. Many criminological theories are basically rooted in factors associated with this factor, be it subcultural elements, different value systems, different opportunity structures, economic and housing conditions, lack of leisure facilities, etc. Many outstanding criminologists have explained crime by referring to the underprivileged position of the lower class. Such arguments do not apply to offenders

from the middle and upper classes; their behaviour, therefore, cannot be explained by most of the existing social theories. It is surprising to see that hardly any theory exists to explain middle-class criminal behaviour. To arrive at theories of this kind it will be necessary to classify offenders according to their socio-economic status.

The group factor as a criterion

Crimes can be committed by groups or by individuals. Research in group dynamics has clearly shown that the pressures imposed on members of a group make it difficult for them not to participate in group activities. Moreover, acting collectively -especially in gang behaviour- reduces the feeling of personal responsibility for what takes place. We therefore may expect that subjects involved in criminal group activities (group violence, shoplifting with a group, etc.) will differ from offenders who commit these offences by themselves.

Illustration of the classification model

The foregoing is illustrated in figure 1. For the sake of convenience, I have represented the total criminal population as a rectangular block whose sides are formed by the variables: type of the crime committed, social class to which the criminal belongs and age of the criminal. By taking into consideration the subcategories which can be distinguished within each of these variables, sub-blocks can be formed. These sub-blocks are then divided in turn by the dimensions: male/female, whether the crime was committed with others, or committed alone<sup>x)</sup>. In this way, the whole block may be subdivided into sub-blocks each in the form of a triangle,

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x) It is probably unnecessary to point out that  
1. the above-mentioned criteria may not always be applicable and that  
2. with regard to certain crimes other criteria may be more appropriate.  
This does not affect the principle, however, that if more reliable theories are to be formulated they will have to be based on the study of more homogeneous groups.

representing a sub-group of criminals which is homogeneous with regard to the crime committed, the social class to which the criminal belongs, the criminal's age and sex, and whether the crime was committed with others or alone.

By comparing a sub-category with criminals from other sub-blocks and with matched control groups of non-criminals, one can gain an understanding of what is characteristic of this particular group. A differential criminology of this kind is essential. In principle, the results of this approach can be threefold.

To start with, it may appear that, whatever the crime, criminals do not differ from non-criminals. A result of this kind would substantially confirm the theories of those criminologists who hold that the only difference between "criminals" and "non-criminals" is that the former were caught and the latter not.

A second possibility is that the research might show that criminals, while differing from control groups of non-criminals, do not exhibit any differences among themselves. Such a result would call for the formulation of one general explanatory model for criminality.

Lastly, it may transpire that the various categories of criminals not only differ from the control group of non-criminals, but that they also differ among themselves. Should this be the case, it will be necessary to devise more specific explanatory theories. My own feelings are that it will be the case. This is not to say, of course, that sub-groups of criminals will not exhibit the same characteristics in certain cases. To allow for such exceptions, it would make sense to develop a more general theory. Whatever the result may prove to be, comparative studies of this sort must form the basis of criminological theories from now on. Anyone who omits this step is, in fact, courting disaster.

#### The need for a behavioural approach

I stated above that two consequences result from the supposition that criminology is directed towards, among other things, the study of criminal behaviour. I have already examined the first. My conclusion was that

the diversity of both criminal behaviour and criminal groups requires a differential criminology. There is no room any more within such a criminology for attempts to explain the origins of criminality in general. Differential criminology sets itself a more modest target. It searches for an answer to the question why certain categories of people (boys, women, members of a given social class, etc.) exhibit a certain type of what may be classified as criminal behaviour. In practice, it is likely that this will result in the formulation of a multiplicity of criminological sub-theories. This does not mean, of course, that they would have nothing in common. Some of the variables would definitely crop up in more than one theory, but they might then, for example, receive different emphasis or occur in different combinations. The second consequence of this behavioural approach is that any explanation of criminal behaviour must be based upon behavioural principles. The point of departure is that all behaviour is a function of the personal characteristics of the individual concerned and of the situation in which he finds himself. There can be great differences between the two sorts of characteristics. Below, I give a formula to express criminal behaviour (which is, of course, also a form of behaviour) in terms of these characteristics:

$$C f (P_i, S_i)$$

in which:

- C = criminal behaviour
- $P_i$  = the collective expression of all the personal characteristics relevant to an explanation of the criminal behaviour; the personal characteristics are:
  - $P_1$  = genetic factors
  - $P_2$  = endocrinological variables
  - $P_3$  = biological factors relating to the brain
  - $P_4$  = neurophysiological variables
  - $P_5$  = biochemical factors
  - $P_6$  = psycho-physiological factors
  - $P_7$  = organic factors
  
  - $P_k$  = psychiatric factors
  - $P_l$  = psychological factors
  - $P^1$  = sociological variables
  - $P^m$  = attitudes, norms and values
  - $P_n$
- $S_i$  = the circumstances or situation of the individual concerned, both past and present. A further distinction can be made between:

- $S_1$  = *the situation at micro level* - the situation and circumstances in which the criminal behaviour took place. In the case of shoplifting, for instance, this would be the shop. The victim's role may be another factor to be taken into account here.
- $S_2$  = *the situation at meso level* - situations where there is or has been some element of fundamental interaction between the individual concerned and third parties. This would include, for instance, not only events that occurred in the parental home, at school or at work, in the neighbourhood where he lives and in contact with friends and others of his age, but also his experiences with the police, the courts, probation and after-care services, child care and protection authorities, etc.
- $S_3$  = *the situation at macro level* - the social system and climate in which the individual lives. Important factors falling into this category are, for instance, the social and political climate, the economic situation, employment, educational facilities, housing, recreational facilities, the level of urbanisation, and the social climate within a community (attitudes towards minority groups, the degree of tolerance present, and mutual solidarity).

The formula  $C f (P_i, S_i)$  is the premise on which the theory of differential criminology is based. It functions, as it were, as a check-list enabling one to determine which variables may be relevant to any particular subject of criminological research. What is perhaps more important is that at the same time it makes clear to us which variables the researcher emphasises and which are ignored in his attempt to explain the causes of criminal behaviour. A cursory look at the existing theories quickly shows that they are not conspicuous for their variety.

#### Criminology as an interdisciplinary science

The formula given above expressing criminal behaviour as a function of the person and the situation is not intended as an explanatory model. It is no more than an attempt to reduce the variables which may be relevant to criminal behaviour to a single denominator. As such it could be called a sort of regulatory principle. The various criminogenic factors which may be relevant are expressed in the formula. The model is multi-disciplinary, or if you like, multifactorial. In itself this is still insufficient to arrive at an adequate explanation of criminal behaviour.

To achieve that, an *interdisciplinary* approach is necessary which will only in the long run be able to lead to interdisciplinary models. Such an interdisciplinary orientation, however, should not be directed only towards *supplementing* views derived from one's own discipline. What is also important is that this approach should penetrate into the concepts applied in accordance with one's "own" science, so that multidisciplinary concepts can be established.

In my opinion, the lack of such concepts is one of the most important reasons that criminological research -which after all relies on these concepts- has until now produced so little criminological theory that will stand up to critical examination. For instance, many sociological theories concerned with class, unemployment, separation from parents, etc., would be of more value if, when applying and interpreting them, criminologists gave some consideration to views derived from other disciplines such as psychology, pedagogy and cultural anthropology. To illustrate this, let us take the concept of unemployment. From the sociographic point of view, this is a static concept. It indicates that someone is out of work. For other sciences, however, it is a dynamic concept which may have *extremely varied* consequences for the person concerned. Psychology, for instance, is interested in how people out of work react to being unemployed; psychiatry is interested in how the experience affects their personalities; and social psychology is concerned about how neighbours and society in general treat the unemployed and what this means to the unemployed themselves. *The answers can vary*, both in the positive as well as the negative sense, depending on the personality of the individual concerned, the sort of work he had, the situation in which he finds himself, the neighbourhood where he lives, the length of time he has been unemployed, the opportunities he has of occupying himself during this period, his financial situation, etc.

Many criminologists would pay little attention to these sorts of deliberations. To them, the unemployed are all alike for the purposes of any relation between unemployment and criminality. They work only with the statistical concept: employed or unemployed. This is then correlated with criminality. The result of this calculation is then supposed to provide us with an understanding of what significance unemployment has as a cause of criminality. It can be seen that similar

approaches have been used to deal with variables such as class, separation from parents, religion, etc.

*Again and again, one finds that factors which may vary considerably in their significance to the individuals concerned have been treated as static magnitudes having only one meaning.*

This sort of undesirable interpretation and application can be prevented if an interdisciplinary approach is used to throw light on criminological concepts. An approach of this kind is an important condition governing the further development of criminology.

And there is another reason why we should adopt an interdisciplinary approach: research shows that, individually, the various disciplines are only able to explain the origin of criminal behaviour to a very limited extent. Statistically speaking, each discipline is able to explain only a small proportion of the variance. This is partially attributable to the complex nature of the problem of criminality, which cannot be treated as a straightforward sociological, psychological or biological question, to name but a few disciplines. Progress can be made, therefore, only by means of a multidisciplinary approach. Criminologists who, nevertheless, continue to favour a unidisciplinary approach might profitably consider how it is that the great majority of the population to which their theory is applicable (for instance, the lower classes, the unemployed, the mentally unstable) are not normally criminals.

In my opinion, there is yet another reason why we have so far not succeeded in producing a proper explanation of the phenomenon of criminality. By this, I mean that we are still unable to determine in a reliable manner whether an individual is criminal, and if so, to what extent. This is another area in which political and ideological factors may sometimes play a role. History provides a fascinating example. Whereas every criminal was for long (far too long) thought of as abnormal, the balance has not tilted to the other extreme as a result of the research into unreported crime. Self-reporting studies showed clearly that everyone actually commits crimes and that, from the point of view of statistics at any rate, the perpetration of crimes should be regarded as normal. As is often the case in such situations, this reaction is also extreme.

Equilibrium must be restored, therefore. For the present, I would consider this will be achieved when it is accepted that criminality is as much a

sort of personal variable as intelligence. Just as there are stupid, averagely intelligent and extremely intelligent people, so it should be recognized that people can be classified to form a continuum from the person who is barely criminal at one extreme to the serious criminal at the other. If criminology is to develop further, means will have to be found which will enable us to determine the place every individual occupies in this "scale". True, that is no easy task, neither technically nor psychologically. We shall first have to surmount the ideological barrier that not everyone is the same in this respect: an unpopular task in a period in which the removal of inequalities as a political objective is held to be progressive.

#### A model for the formulation of interdisciplinary theories

Comparative research is in principle the basis of any interdisciplinary study. Comparisons of "criminals" and "non-criminals" will be based on the formula  $C f (P_i, S_i)$  showing criminal behaviour as a function of the person and the situation.

In carrying out these comparisons, the principles of differential criminology described above will need to be applied as much as possible. Any such comparative study will reveal a number of differences between the two groups.

For example, a study of violent criminals might produce the following data: violent delinquents are usually young and generally from the lower class. Their home life is characterized by a lack of affection and the children are often beaten by their parents. Their achievements at school are minimal. They have no hobbies, nor do they belong to any clubs, spending most of their leisure outdoors, visiting pubs, etc. They have a low frustration tolerance together with a quick temper. They are also found to have a deficiency of thiamin and an excess of dopamine, and their psycho-physiological reaction level is said to be low. A preliminary analysis shows clearly that what is presented here as a collection of isolated variables consists in fact of a number of interrelated parts. Their composition can be changed to suit the approach one chooses to adopt.

As far as that is concerned, a number of different regulatory principles can be distinguished. For instance, the variables I have listed could be classified under heads such as: the parental home, leisure activities, personal characteristics, education and school, organic characteristics. Once again, this produces a multidisciplinary classification. However, what we want is an interdisciplinary approach. How can we set about developing such an approach? In my opinion we should start with a kind of phenomenological analysis, looking for mechanisms and general principles which might enable us to gain an understanding of the way crimes are committed.

The assumptions we use should not be "discipline-biased". Besides, we should not be so naïve as to look for real causal factors. Taking this into consideration it might be useful to distinguish three kinds of factors which each have some relevance to the cause of crime: predisposing factors, facilitatory factors and inhibitory factors. The general idea is that in the aetiology of crime it should be possible to identify factors which make people likely to commit crimes. These are what I call the predisposing factors. Their presence increases the likelihood of criminal behaviour.

Whether a predisposing variable (or a couple of them) will actually lead to crime depends on:

- the number and strength of these predisposing factors;
- the presence of factors which, in combination or interaction with predisposing factors, favour the commission of crimes: these we have called "facilitatory" factors;
- the presence of factors which in combination or interaction with predisposing variables remove the cause of crime: the "inhibitory" factors.

It can be easily seen that what we favour is a probabilistic model for the explanation of crime, approximately as follows: given the existence of predisposing factors A and B the presence of facilitatory factors a, b and c and the absence of inhibitory factors such as d and e, the probability that a specific crime will be committed is y.

In this non-discipline-biased model each discipline can contribute any factor, be it predisposing, facilitatory or inhibitory.

Having arrived at this point the more empirically oriented reader might be a little bit puzzled. He might wish to know what is actually meant by concepts such as predisposing factors, facilitatory factors, etc. and what the difference is between them. He might wonder for instance whether facilitatory factors and inhibitory factors should not be considered to be extremes of the same continuum. At this moment it would not be easy to give clear-cut definitions of these concepts. It is certainly true that they can overlap in meaning. It could be argued, for instance, that the difference between predisposing and facilitatory factors is in some cases more quantitative than qualitative. For our purpose these concepts are nothing more than means to an end. I think it will suffice to give the following descriptions.

*Predisposing factors* are variables which are able to explain by themselves a significant part of the variance in criminal behaviour. This means that there is a kind of direct -although not necessary compelling- relationship between these variables and the phenomena studied. Therefore, when studying a certain type of offender, we must be able to show the presence of these factors. However, if we examined the general population of subjects characterized by predisposing factors, we would find that only some of them have been actually involved in the criminal behaviour concerned. This is because the presence of predisposing factors in itself does not necessarily entail the occurrence of criminal behaviour. We need more, either the absence of inhibitory factors or the presence of facilitatory ones. To illustrate this: in cases of maltreatment it should be possible to show the presence of frustrations. However, of the population of frustrated subjects only some will actually behave violently. This is because it takes more to go from frustration to violence. This "more" is what we meant by either the presence of facilitatory factors (for example alcohol consumption, fatigue, a lack of verbal skills) or the absence of inhibitory factors (middle-class ideas about solving conflicts, low physical strength, attitudes about non-violence based on religion, etc.)

*Facilitatory variables.* By now it should be clear what is meant by these factors. Initially they only have an indirect relationship with crime.

In order to be effective they need the presence of a predisposing factor; by themselves they cannot cause crime. What they do is speed up delinquent processes, favour criminal solutions, etc. In this way they are to a certain extent comparable to the catalysts in chemistry. It is much more difficult to establish in the presence of facilitatory factors than of predisposing factors as there are so many factors which can facilitate crime. In the case of some offenders crime might have been promoted by certain variables, with others different factors might have been crucial. The result is that it can be very difficult to identify a specific facilitatory factor. Our traditional approach, in which we try to establish the significance of a variable by comparing its prevalence in delinquent and non-delinquent groups, is too crude an approach.

*Inhibitory factors.* As already stated, these variables are of the utmost importance; they are able to rule out the potentially detrimental influence of predisposing factors. As such they are of tremendous importance in any crime prevention programme.

One question remains to be answered. Are facilitatory and inhibitory factors opposites? In some cases they will be, but it is easy to show that they cannot be regarded simply as the extreme ends of the same variable. For instance, alcohol consumption can be considered a facilitatory factor; non-drinking, however, cannot be perceived as inhibiting. The presence of strong religious feelings can act as an inhibitory factor; their absence, on the other hand, cannot be seen to favour crime.

#### Turning theory into practice

Now we have put forward the concepts for a method of gaining more understanding of crime, the crucial question is how to proceed from here. From the above it should be clear that this is no easy question to answer. Crime is, as we have seen, a function of the offender  $\{C f (P_i, S_i)\}$ . All disciplines dealing with human behaviour could therefore in principle provide criminologists with what we have called predisposing, fascilitatory

or inhibitory factors. Unfortunately criminology is not organized the way a behavioural science should be. Its frame of reference is predominantly confined to what could be labelled social sciences, supplemented by some psychiatry. The biological sciences are almost completely lacking. This means that the existing infrastructure of criminology does not allow a real socio-biological approach.

In order to make such an approach possible the first thing to do is to increase the number of disciplines involved in criminology. This can be done in two ways, first by supplementing the traditional staffs of criminological institutes with neurobiologists, psycho-physiologists, endocrinologists, etc. A second, less drastic way, is to try to get representatives of biological disciplines interested in the crime problem. Let us assume that we have succeeded in the latter. Then, as a start, a kind of "fishing expedition" will have to take place. That is to say, variables must be brought in from each discipline, that might be able to differentiate between delinquents and non-delinquents. Whether they actually have this power **should** be established by comparing offenders with control-groups of non-offenders according to the principles of differential criminology set out above. Comparative study of this kind should provide us with a list of variables with which we can distinguish the two groups. In the case of violent offenders it could, for example, produce the following results: violent delinquents are young, generally from the lower classes; they are often beaten in their early years; their parents use violence as a means of settling arguments, and do little to stimulate their children's development; there is lack of affection at home; the children are rarely at home; they frequently visit pubs, they drink a lot, have no hobbies and do not belong to any clubs; their achievements at school are minimal, they express themselves badly and have a low frustration-tolerance together with a quick temper and poor powers of concentration; they are also physically strong. In addition, they are found to have a deficiency of thiamin and niacin, an excess of deopeamine and a low psycho-physiological reaction level. Keeping in mind our probabilistic model of explaining crime, (see page 15), the first thing to be done is to fill in these data in the proposed formula. This requires the following steps:

1. Identify potential predisposing factors. In our case low frustration tolerance, lack of empathy and absence of any alternative means of achieving goals could be labelled as such.
2. Ascertain which of the remaining variables are related to the predisposing factors. Here a distinction should be made between causal relations (a low frustration tolerance can be caused by a deficiency of thiamin) and functional relations. The latter are of a different order from statistical relations, and are therefore determined not by using correlational calculations -these would be completely out of place here- but by what I would call a chain construction, an inductive process. Given A, B, C, etc., then Y will result, or, to put it in more concrete terms, when someone who is physically strong (A), has little opportunity to gain status by other means (B) and is a member of the lower class where violence is considered more normal (C), then he will be more ready to use violence to achieve status (Y).

In our example low frustration tolerance might be related to deficiency of thiamin and niacin, and associated with a lack of self-control. Lack of empathy might be related to lack of parental affection and low psychophysiological reaction level.

In establishing relationships with our third predisposing factor, absence of any alternative means of achieving goal, the situation might be different according to the goal. Where the aim is to relieve frustration, the following variables might be relevant: inability to communicate, ignorance of any other ways of resolving disputes, strong physique and beatings at home.

Should the objective be to gain status by behaving violently, factors like membership of the lower social class, strong physique "strength gives status" and an absence of other ways of gaining status could be important. It should be clear by now that variables displaying what we have called functional relations with predisposing factors are in fact facilitatory factors.

3. Check which variables are left after steps 1 and 2 have been accomplished. In our case these appear to be the fact that our juveniles are heavy drinkers, that they frequently visit pubs and that they have an excess of deopeamine.

Being heavy drinkers could be seen as another predisposing factor in addition to the existing three. That leaves us with the difficult question of what to do with the dopamine variable. A new line of research has to be carried out to see what could be the relevance of this variable to violence.

Having completed these three steps we have not yet finished our research cycle. An important question still has to be answered: which variables could, in their turn, be responsible for the presence of the predisposing factors identified? For example, having discovered a lack of empathy, we ask how this came about. Such research enables us to add new variables to our research model. What is more important, however, is that it also provides the basis for a preventive programme or a course of treatment. I should like to illustrate this using the factor "absence of any alternative means of achieving goal (status)". Which variables could be responsible for this? Some which come to mind are: received little encouragement at home; lack of leisure facilities in the neighbourhood; the deficiencies of our educational system, which is not directed sufficiently towards stimulating leisure interests and hobbies; our society which puts too little effort into improving the position of people from the lower socio-economic classes and which accords too much significance to status.

Finally, one important step remains to be taken: to find out how it is that there are still so many people to whom these predisposing factors are applicable, but who show no violence. An analysis of this kind puts us on the track of factors which have been called inhibitory. A knowledge of these factors is essential, not only if our theoretical knowledge is to be increased, but also from the point of view of prevention.

#### Back to Lombroso?

In this article we have approached the crime problem from the behavioural point of view. We emphasized the fact that crime is behaviour and as such a function of the personal characteristics of the individuals concerned

and of the situations in which they find themselves { C f (P<sub>i</sub>, S<sub>i</sub>)}. Among the personal characteristics biological traits might play an important role<sup>14)</sup>. Unfortunately, as has been said before, the infrastructure of criminology does not make it easy to verify this assumption. In criminology the main emphasis is still on the social sciences, hardly any attention being paid to biological factors. New schools of criminology<sup>7)</sup> concentrate even more on macro-level factors such as the social and political climate we live in. For several reasons it will not be easy to change this frame of reference. In this respect too criminology displays all the characteristics of any subculture. By applying "pressure" to its members the subculture "determines" the direction in which the profession will develop, which subjects should be studied (for instance social factors) and which not (heredity). This approach works like a self-fulfilling prophecy. By concentrating on social factors -leaving aside the amount of variance explained- criminologists seem to be right in stating that crime is predominantly a social problem. If biological traits are neglected their potential relevance cannot be established. In this respect too it is time the balance was restored. "Restoring" here does not mean going back to Lombroso, it means looking for a new equilibrium. In practice this means that due attention has to be paid to social as well as biological factors.

May the criminology of the future be a socio-biological one!!

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Figure 1

