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UNEMPLOYMENT AND CRIME:
A CRITIQUE OF METHODOLOGY

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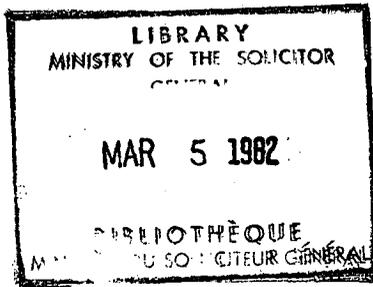
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UNEMPLOYMENT AND CRIME:
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R. Grainger
Programs Branch,
Ministry of the Solicitor General,
October, 1980.

UNEMPLOYMENT AND CRIME:

A CRITIQUE OF METHODOLOGY

In the past few years there have appeared an increasing number of articles in both newspapers and professional journals suggesting a causal connection between unemployment and crime. Just as econometricians have tried to estimate the economic impact of changes in fiscal policy, social scientists are now attempting to identify the social and psychological ramifications of changes in income, prices and employment. A considerable number of research studies have been undertaken on this subject; they have used different data sets and different methodologies and have achieved markedly different results. The objectives of this report are to review articles which link unemployment and crime, and to evaluate critically the methodologies and conclusions of these studies. Having accomplished this, it will be possible to make recommendations with regard to the specific areas where further research effort can most productively be applied.

Executive Summary:

The association between economic conditions in general, unemployment in particular, and criminal activity has been the focus of a considerable amount of research for over a hundred

years. Over this period of time the conceptual structures which link these variables have become more complicated, research methodologies and analytic procedures have become more sophisticated, but the precise relationship has yet to be clarified.

A significant part of the present report deals with the methodological difficulties which complicate this area of research. A major problem concerns the choice between individual and aggregate analysis - whether the unit of observation will be an individual person or an artificial grouping of persons. Other problems include the ecological fallacy, correlation coefficient interpretation, serial correlation, and difficulties with the definition of the time lag. In general, the quality of the research in this area has not been high.

The major part of the report contains a critical review of aggregate research projects which have investigated the relationship between unemployment and crime. Various historical periods in the development of research in this area are identified and representative studies are discussed. The final conclusion of all of the aggregate research would have to be that no firm evidence has been found for either an associative or a causal relationship between unemployment and crime. The studies which claimed a positive correlation between the variables were riddled with methodological deficiencies and theoretical weaknesses; those

which were of a higher methodological quality showed no such relationship. The aggregate search for a connection between these variables should cease; enough research effort has already been expended in this area.

The last part of this report contains a review of the relatively small amount of research which has been done at the individual level of analysis on the relationship between unemployment and crime. Data collected on offenders generally reveal that approximately 40% are unemployed when they commit a crime. However, unemployment is only one of the characteristics that offenders have in common. The results of several controlled studies are in conflict, but there would appear to be enough evidence to support a major study at the individual level to clarify the situation, but not enough evidence to justify a large program of employment for crime-prone groups.

Introduction:

For over a hundred years, casual speculation and empirical research results have suggested a functional relationship between unemployment and crime. However, there has been a recent resurgence of interest in economic interpretations for crime. Researchers have become concerned with the social as well as individual repercussions from changes in national economic policy. The general rationale for this approach to criminological

research is that economic activity in general is so central a part of life that it must have a significant influence on social behavior:

"Since theories of economic influence or "determinism" assume that social arrangements generally are profoundly affected by ("determined" in the view of the extremists) the existing system of economics, it follows that the problems and maladjustments of society, such as crime, are likewise the product of and affected by the existing economic arrangement. Hence, theories of economic influence on social arrangements generally become also theories of the more specific influence of economic factors on crime in society".

(Vold, 1958, p. 162).

However, those criminologists who attach considerable importance to economic factors in crime are far from unanimous with regard to the details of the theory. Liberal and Marxist criminologists point to the unequal distribution of income and opportunity and cite this as the most important general cause of crime.

"If most American crime is crime against property, and if the major cause of this crime is the relative deprivation perceived by its perpetrators, then American society, by emphasizing its constructive values (e.g., self-fulfillment and equality of opportunity) instead of their divisive concomitants (e.g., profit and special privilege), can, by moving legislatively in the

suggested directions be altered sufficiently to maintain its individualistic orientation, without being forced to "live with" a high level of crime. Stripped of the incubus of gross inequality by accident of birth, America's citizens can move toward harmonization of those oft-conflicting ends - individual freedom and equality of opportunity.

Under the rule of this harmony, crime - particularly crime committed against the property of the relatively rich by the relatively poor - is likely to decrease markedly".

(Chester, 1977, p. 289).

Chester (1976) has suggested that a very substantial inheritance tax would, over time, reduce the inequalities in the distribution of wealth and opportunity, and would thus reduce acquisitive crime in particular. In a similar view, Wicker, an influential editor, has pointed to the simultaneous occurrence of high unemployment and "perceived relative deprivation" as a combination which produces property crimes.

"One point not sufficiently developed in earlier articles is that it is not just unemployment and poverty, but so much unemployment and poverty existing side by side with so much affluence, that may be at the heart of swiftly rising crime rates. If widespread affluence is highly visible to the numerous poor and jobless, particularly in the cities, and if those poor and jobless, as argued here, are less and less able to rise by unskilled labour that is no longer in demand in an economy that requires technological or professional skills, it seems reasonable to

suppose that the hopeless and embittered underclass that results would turn more frequently to property and violent crimes against the affluent, as well as among themselves."

(Wicker, 1975, p. 33).

This group of liberal criminologists, represented by Chester and Silberman, argue that the campaign against crime must involve the root causes of criminal activity - causes which include frustration, anger and bitterness which result from the perceived relative economic deprivation on the part of a less-privileged segment of the population. The ultimate source of these criminogenic emotions is thus external to the individual, not part of his psychological or personality structure, and is susceptible or amenable to government social programs to reduce differentials in wealth and property.

Another group, of conservative economic criminologists, while admitting the fact that the majority of crimes are committed by a segment of the population characterized by low income and high unemployment, stresses the fact that the great majority of poor and unemployed persons are not involved in criminal activity. Thus income and unemployment status cannot be that important in leading to the commission of crimes. Rather, it is argued that ninety-five per cent of the population will evaluate the risks and potential benefits of a crime and will reject the proposed action. The rationality of the offender is the key to this approach:

"To a degree, anticrime policies may be frustrated by the failure of employment policies, but it would be equally correct to say that so long as the criminal justice system does not impede crime, efforts to reduce unemployment will not work. If legitimate opportunities for work are unavailable, many young persons will turn to crime; but if criminal opportunities are profitable, many young persons will not take those legitimate jobs that exist. The benefits of work and the costs of crime must be increased simultaneously; to increase one but not the other makes sense only if one assumes that young persons are irrational".

(Wilson, 1975, p. 202)

This "rationalist economic" approach to crime stresses that a high percentage of persons engaged in criminal activity, especially property crimes, are motivated to do so by rational consideration. The potential offender weighs the costs and benefits of legal activity relative to the costs and benefits of criminal activity and chooses the winning side. As is suggested in the above quotation from Wilson, the solution to criminal activity is to increase the risks and costs of criminal acts while at the same time increasing the rewards of legitimate activity.

It is apparent that unemployment plays an important role in both of these conceptualizations of crime. According to both theories, an increase in unemployment will be associated with an increase in crime. No attempt will be made in this report to assess the validity of these two models of crime causation - they have been presented here as background material for what is to follow.

UNEMPLOYMENT AND CRIME: AGGREGATE ANALYSIS

One of the clearest dichotomies in the research on the association between unemployment and crime is that between the individual and the aggregate levels of analysis. There are very significant methodological and operational differences between these two types of research; they will therefore be discussed separately, beginning with aggregate analysis.

Methodological Considerations:

Selection of the Level of Analysis:

In initiating a study of the relationship between unemployment and crime, one of the most important research design considerations concerns the choice between the individual and the aggregate level of analysis. This decision has far-reaching ramifications upon the conclusions which can be drawn and is a logical result of the specification of the research hypothesis. The difference between these two types of analysis lies in the definition of the observational units - in the one case the observational units are individuals who may be combined into groups for the purpose of analysis. In the other case, aggregate analysis, the unit of observation is a collection of persons which cannot be subdivided. Usually, aggregate units of analysis are

political areas such as census tracts, cities, provinces or countries, all spatial units for which data are normally published.

The choice between individual and aggregate analysis should be a function of the nature of the research question. If the hypothesis under investigation refers to individual behaviour or activity, then the research should be carried out by studying data relating to individuals. Similarly, if one is primarily interested in the characteristics of some collectivity, then the data should be collected at that level of detail.

In many cases, however, the level of specification of the hypothesis does not match that of the data. It is very common to find aggregate data being used to analyse a hypothesis concerning individuals. The problems of such a mismatch will be discussed later. In the social sciences the use of aggregate data is very common since most social data are collected by government departments and such data are aggregated in order to protect the confidentiality of the respondents. The collection of aggregate data is relatively simple, and researchers mistakenly believe that they can rather quickly give evidence on an individual-level relationship through the use of aggregate data.

There are two major problems which complicate aggregate studies of the relationship between unemployment and crime. The first of these concerns the definition of an "unemployment rate"

for an aggregate unit of population. For an individual, the characteristic of employment status is binary; the person either has a job or he has not. However, for a collective unit such as a city or a country or a province, employment status is calculated as a rate. This rate is a characteristic of the entire collectivity and does not refer to any particular person. When variables which are relatively simple at the individual level are calculated for aggregate units, there is some confusion concerning the actual meaning of the aggregate variable. In the case of unemployment and crime, there is a tendency for an aggregate unemployment variable to become a very generalized economic variable, like total retail sales or GNP/capita. In aggregate studies, there is a tendency for collective variables to lose their specificity.

The second problem, and by far the more serious one, arises when aggregate data are used to investigate a hypothesis which is clearly related to individual behavior. This problem is known as "the fallacy of the wrong level", the "ecological fallacy", or more simply as the "aggregate fallacy". The researcher who uses aggregate data to test an hypothesis concerning individual behaviour is assuming that the aggregate correlation coefficient which he obtains from his analysis is a close reflection of the unknown correlation which operates at the individual level. Unfortunately, there is no known relationship, simple or complex, between individual level and aggregate level

correlation coefficients. They will undoubtedly be of different sizes and they may indeed have different signs. Thus the results of aggregate studies can only be used as supporting evidence concerning an individual level relationship. The following example will clarify what is meant:

"When delinquency rate areas are being examined, it is important to remember that the characteristics of the general populations within an area are not necessarily the same as those of the individual delinquents who live in the same area. For instance, the culture conflict faced by the children of immigrants is frequently cited as a contributing factor to delinquency. Though the highest delinquency rate area in Hamilton has the highest proportions of immigrants and Roman Catholics this does not necessarily imply that the delinquents themselves are either immigrants or Roman Catholics. In fact, when the religion and nationality of the children who appear in court are examined, both immigrants and Roman Catholics are under-represented. Perhaps stronger cohesion in the families of these groups serves to cut down delinquency among their children. It is dangerous to assume that there is a constant relation between a particular ethnic or religions group and a particular social problem."

(Nease, 1966, p. 137).

In this example it is clear that the aggregate correlation between delinquency and "foreign birth" was positive while the relationship at the individual level of analysis was negative. Aggregate research results provide, at best, only circumstantial evidence for the operation of a relationship at the individual level.

The aggregate fallacy occurs when the level of interpretation or conclusion is not the same as that of the analysis or data. There is nothing intrinsically inferior about aggregate analysis - the danger lies in the possibility for misinterpretation of the research results. The results of aggregate studies must be interpreted at the aggregate level - the correlations are accurate and valid estimates of aggregate relationships. In the example cited above, there was a positive aggregate correlation between delinquency rates on the one hand, and proportions of Catholics and immigrants on the other. It is quite valid to interpret this result in terms of the aggregate unit of analysis. Those areas of Hamilton where delinquency rates are highest are characterized by generally high proportions of Roman Catholics and immigrants. However, this in no way implies a causal link between the two.

Interpretation of the Correlation Coefficient:

Another methodological or statistical problem in the literature on crime and unemployment concerns the interpretation of the meaning of the most frequently used statistic, the simple correlation coefficient. Basically, a correlation coefficient is a measure of the degree of association between two variables. It cannot be interpreted as evidence for a cause and effect relationship between these variables and therefore can give no indication of the direction of any relationship. Correlation

coefficients are also very sensitive to the existence of extreme cases. In general, correlation coefficients must be interpreted with great caution. The results of some correlational analyses are so conceptually loose as to allow a researcher to select for attention only those coefficients which are consistent with his preconceived notions.

Problems with Longitudinal Studies:

While the majority of studies of the relationship between unemployment and crime have used a cross-sectional approach, others have employed a longitudinal or time-series orientation. In fact, these longitudinal studies have generally reported positive correlations between unemployment and crime. These studies, however, suffer from two very serious methodological obstacles. The first of these is serial correlation (also known as auto-correlation). The problem of serial correlation arises when a technique, like correlational analysis, which demands independence between the observations, is applied to time-series data. The unemployment rate (or for that matter the crime rate) for any particular year is not a completely independent observation - its value is clearly related to the value for the previous year. There tends to be a higher correlation between the values of adjacent years than between

years chosen at random. The violation of this assumption of independence would clearly throw the results of such analyses into doubt. There are methods of removing the effects of serial correlation but they have rarely been applied in research on unemployment and crime.

The second major methodological problem associated with longitudinal analysis is concerned with the definition of the time lag between the change in the independent variable (in this case unemployment), and the supposedly related change in the dependent variable (in this case the crime rate). The existence of this time lag complicates the analysis because it is a second item which is being tested (the first item is the relationship between unemployment and crime).

"In this kind of problem, one cannot both measure the degree of relationship and the time lag involved by the same correlation coefficient. Either one assumes the relationship (presumably on the basis of other good, independent information) and then uses his coefficient to determine the time when the relationship is most complete, or he assumes the time lag (again, presumably from other independent information) and uses the coefficient of correlation as the measure of the degree of relationship involved. It is impossible to do both at the same time. Yet this is precisely where much of the confusion comes in the statistical argument about the relation between economic conditions and criminality".

(Vold, 1958, p. 181).

The tendency in longitudinal studies has been to assume the validity of the relationship, to run the correlation analysis between unemployment and various types of crime for several different time lags and then to choose the time lag which produces the highest correlation coefficients.

Causal Ordering of Variables:

It is also exceedingly difficult to determine the order in which the variables influence each other. This is a more serious problem with regard to aggregate studies because the variables describe characteristics of collections of persons. For example, suppose that a significant positive correlation is found between unemployment and crime for a collection of cities.

Some researchers might be tempted to conclude that higher levels of unemployment in some way produce higher levels of crime. But an equally legitimate interpretation is that higher levels of crime produce higher levels of unemployment. Or, each of these variables could be a function of some unknown third variable. In short, a correlation coefficient alone is of no use at all in establishing the direction of the relationship between variables.

Aggregate Empirical Results:

This section contains an examination of research results from aggregate studies of the relationship between unemployment and crime. The "research question" of these studies takes two forms. The associative style is as follows: "Is there any

evidence to suggest that higher crime rates are associated either temporally or spatially with higher unemployment rates?" This research question is relatively simple and straight-forward to answer. However, the causal form of the question is subtly but importantly different: "Will an increase in the unemployment rate produce an increase in crime rates?". The latter question, to be handled properly, requires a much higher level of methodological and analytic capability although most research in this area uses a simple correlation coefficient to suggest both causality and the direction of the relationship.

The question of a possible causal relationship between general economic conditions and crime has attracted a lot of attention for over one hundred years. The theoretical structure of nineteenth century studies suggested a very simplistic, linear causal relationship between economic need and the commission of a crime. Because a basic economic need for the staples of existence was thought to be the operative influence behind criminality, researchers chose the price of food as the best measure of economic distress. These studies were conducted prior to the development and widespread use of quantitative statistical tools such as the correlation coefficient. The analytic methodology consisted of presenting two vectors of numbers, either in tabular or graphic form, one for longitudinal changes in the price of a staple food and the other for changes in a measure of criminality. The researcher then proceeded to draw

subjective and equivocal conclusions from this evidence. Thomas's (1927) comment on the methodological aspects of these early studies is significant:

"The criminologists seem to me to be the worst offenders in their treatment of economic influences on social life. They use and abuse statistics outrageously, presenting short series, frequently of less than ten years, and claiming general causality from such comparisons... (Their) discussions of the relations of crime and economic conditions are still in the realm of metaphysics."
(Thomas, 1927).

One of the few early studies which can survive a close methodological examination is that of Georg von Mayr (1867). He correlated the equivalent of UCR* offences in Bavaria over the time period between 1836 and 1861 with fluctuations in the local price of rye. He found evidence for a positive relationship between property crimes and the price of grain and a negative relationship for crimes against persons.

"for every half penny increase in the price of rye there would be an increase of one theft per 100,000 persons, and for every drop in the price of rye there would be a corresponding decrease in the crime of theft".

(Vold, 1958, p. 167).

* Uniform Crime Reports are the statistical returns submitted by police forces.

A relatively modern re-analysis of this data, (Woytinsky, 1929) indicated a correlation of +0.76 between the price of rye and offences against property.

Other studies completely contradicted the results of von Mayr. Some of these studies used similar commodity price indices, but over time attention shifted to industrial indices. Also, over time, studies were based on more carefully controlled comparisons and on more validly comparable data.

The prevailing philosophical and ideological sentiment throughout the twentieth century has been in favor of a positive correlation between crime and unemployment. This has been part of a general liberal philosophy which linked poverty to a long list of social ills including hunger, vice, delinquency, amoralism, disease, and early death. There may have been a tendency on the part of researchers to define the problem, collect and analyze their data, and interpret their results in line with this orientation.

In the early part of the twentieth century social scientists in general, and economists in particular, became aware of temporal changes in economic conditions on a national scale. There was a great deal of research effort expended in attempting to identify the social ramifications of these economic fluctuations. Considerable attention was given to crime. Because

of the depression of the 1930s, unemployment became a much more important economic variable. The conspicuousness of the unemployment condition, as well as greatly increased national data collection procedures, contributed to the saliency of the unemployment variable.

The work of Thomas (1927) is representative of the research in the early part of the twentieth century. She used a composite economic index using such items as coal and iron production, value of exports, and unemployment. The social variables included alcoholism, crime, marriages, and immigration. She experimented with time lags of up to three years and found that crimes against property with violence showed a clear tendency to increase in times of depression and to decrease in times of prosperity. Crimes against persons showed a modest tendency in the opposite direction. Thomas herself expressed certain doubts about the validity of her analytical procedures. Vold (1958) soundly criticized her research technique and conclusions.

After a comprehensive review of research linking unemployment and crime, Vold (1958) concluded:

"In the objective data reviewed, assumptions including either positive or negative relationships with economic conditions may be supported with some show of statistical significance. The obvious inference is that the general relations of economic

conditions and criminality are so indefinite that no clear or definite conclusions can be drawn. Hence there is a general tendency to accept the position that economic conditions represent only one of a large number of environmental circumstances. As such, this then becomes part of the "multiple factor" approach to causation."
(Vold, 1958, p. 181-2).

In the twenty-one years since Vold wrote the words above, little has happened to change the validity of his conclusion. More research has been done on the linkage between unemployment and crime but the issue has yet to be clarified. Part of the difficulty is that these are not matters of accurately reported routine information. The reporting problems of UCR data are well known and need not be discussed here. It would be naive to believe that UCR would remain constant over time (for longitudinal analysis) or over space (for cross-sectional studies). The relatively recent introduction of victimization surveys to estimate the "true" volume of criminality will probably serve only to heighten the confused state of affairs with regard to unemployment and crime. The other element in this relationship, the measurement of unemployment, is no less susceptible to definitional and structural changes. The extent to which the "real" unemployment rate in Canada has been affected by changes in the availability of unemployment insurance is discussed by Grubel et al. (1975). Neither of these measures of social activity lend themselves to accurate measurement or uniform data collection. This "data quality" characteristic would produce a

certain amount of analytical noise or static but should not obfuscate the relationship entirely, if it does indeed exist.

R.W. Gillespie (1975) carried out another detailed review of the research literature which attempted to clarify the relationship between unemployment and crime. This review is an excellent reference document because the author intentionally selected for consideration only those research studies which, in his opinion, were methodologically rigorous and analytically sound. The author's bias is also very clear - he tends to favour an economic explanation for crime - and this helps immensely in the interpretation of his conclusions. Gillespie considered nineteen research projects and divided them into cross-sectional studies (at various levels of aggregation from census tracts through city, metropolitan area and state levels to the national level) and longitudinal or time series studies (primarily using either cities or the entire United States). After careful consideration of these studies, Gillespie concluded:

"Statistical results of studies relating unemployment to crime show general, if not uniform, support for a positive correlation between these two variables. The strength of the relationship varies with the nature of the sample and, in the multivariate analyses, with the choice of variables to hold tastes constant and to capture the effect of income. This variation in results makes any precise quantitative assessment of the strength of the relationship

conjectural at this time; perhaps the strength can best be characterized as being neither trivial nor substantial, but modest."

(Gillespie, 1975), p. 4)

This is very lukewarm support for the economic theory of crime - that there appears to be a modest relationship between unemployment and crime. And if this statement errs in any direction from absolute truth, it is probable that it is too optimistic since Gillespie is a self-admitted advocate of the economic theory of crime. This is the final conclusion of a critical examination of the most rigorous research studies on the subject of unemployment and crime over the past twenty years. The conclusion of Gillespie is not very different from that of Vold twenty years earlier. It would appear that if there is a relationship between these variables, it is tenuous, poorly defined, and insubstantial.

However, even if all of the nineteen studies reviewed found a highly significant positive correlation between unemployment and crime, great care would be required in the interpretation because all of these studies used groups of persons as units of observation. With such aggregate data the legitimate conclusion would have been that higher levels of crime tend to be found in the same areas as higher levels of unemployment. Also, such aggregate correlational results give no valid indication of the direction of the influence of the variables. It could be that higher levels of crime tend to produce higher levels of

unemployment or both of these variables could be functions of some third unknown variable. But most importantly these aggregate research results cannot be used as strong evidence for the operation of these variables at the level of the individual.

Gillespie (1975) found different results for the relationship between unemployment and crime depending on the analytic approach, whether cross-sectional or longitudinal:

"Only in the use of state cross-sectional data was there a complete absence of a significant statistical relationship, and only among the studies using city time series data was a consistently significant positive relationship reported."

(Gillespie, 1975, p. 40).

This is one of the clearest facts emerging from an examination of research on unemployment and crime, that the "best" results are obtained with the use of time series analysis. But it is precisely this approach which is plagued by problems of serial correlation which almost inevitably increase the size of the correlation coefficients. The most prevalent (and questionable) generalizations concerning the impact of changing economic conditions and crime have come from longitudinal analyses. For example, Sutherland and Cressey list the following six trends in their textbook on criminology.

- "1. The general crime rate does not increase significantly in periods of economic depression.

2. Serious crimes have a slight and inconsistent tendency to rise in periods of economic depression and fall in periods of prosperity.
3. Property crimes involving violence show a tendency to increase in periods of depression but property crimes involving no violence, such as larceny, show only a very slight and inconsistent tendency to increase in depression periods.
4. Drunkenness tends to increase in periods of prosperity according to some studies, but shows no significant change according to others.
5. Crimes against the person show no consistent relationship to the business cycle.
6. Juvenile delinquency tends to increase in periods of prosperity and to decrease during periods of depression."
(Sutherland & Cressey, 1978, p. 235-6).

As a preface to this list of trends, the authors warn their readers that the methodological difficulties in this area of research are such that "no positive, definite and valid generalizations can be made."

Recently, Brenner (1976a and b) has conducted time series analyses on the correlation between health, criminal activity and several economic indicators, one of which is the unemployment rate. In one study (1976a), involving seventy years

of data from the United States, Canada, England and Wales, and Scotland, Brenner arrived at the following three general conclusions: 1) downturns in the economy and resulting increases in unemployment were associated with increases in most categories of reported crime; 2) periods of economic growth were associated with increases in most categories of reported crime; 3) the time lag between economic fluctuations and increased crime rates has grown shorter since the Second World War.

Brenner's finding of a negative correlation between unemployment and crime for certain periods is consistent with the general perception that over the past century the economic condition of the population has improved rather dramatically while crime has increased at least as fast over the same period.

Brenner explains the negative association between unemployment and crime in the following way:

"Long term economic growth appears to produce pathological effects which may involve a) increased social inequality, or relative inequality, b) urbanization, with its problems of decreased significant interpersonal relationships as related to population size, crowding and reduced family structure. There may be a minor positive impact of general economic growth, in terms of urbanization, on pathology due to the "civilizing" effects of urban life, and a probable decrease in tolerance for personal violence."
(Brenner, 1976a, p. 47).

This is a highly speculative interpretation of the research results. The interpretation is dominated by individual level psychological and sociological processes even while the data were highly aggregated at the national level. Brenner's interpretations have to be examined with a jaundiced eye.

It is possible that the relationship between unemployment and crime is valid only for well-defined sub-groups of the population. In an early study, Glaser and Rice (1959) tested the hypothesis that juvenile crime was negatively related to employment rates while at the same time adult crime was positively related to unemployment. Using national American data and employing constructed indices to surmount data deficiencies, they found some statistical support for their conclusion.

In a similar study, using Australian data on juvenile offenders, Kraus (1979) found that the relationship between unemployment and crime was spurious for this segment of the population.

"In a longitudinal analysis of the 1964-1977 period in NSW, no association was found between unemployment and delinquency rates of working age male juveniles. There was a highly significant association between the status of adjudicated juvenile offender and unemployment, which was independent from the prevailing employment opportunities. It was concluded that unemployment enforced upon working age juveniles by economic conditions is not criminogenic, and

that high unemployment among delinquents is due to their not availing themselves of employment opportunities to the same extent as do other working age juveniles and/or is a reflection of unemployment level in their area of residence".

(Kraus, 1979, p. 12.)

In spite of the high positive correlation between unemployment and crime for his data, Kraus argues that these two variables are not directly or functionally related, that the statistical relationship is coincidental.

In 1977, Jankovic published a study on the relationship between punishment and economic fluctuations. He came to the following conclusion with regard to the relatively recent efforts of economists to bring their statistical expertise to bear on the relationship between unemployment and crime:

"In summary, the empirical findings reported by the new economic school do not support the hypothesis that there is a positive relationship between unemployment rates and crime rates. Those studies which claim such a relationship fail to consider any additional independent variables, have severe methodological short-comings (Fleisher, 1966), report very low correlations, (Singell, 1967), or rely on statistical models of convenience rather than meaningful theoretical constructs (Allison, 1972). The more recent studies, which are both theoretically and methodologically superior to the

earlier ones (Phillips et al., 1972; Ehrlick, 1974), fail to find a significant positive relationship between unemployment and crime." (Jankovic, 1977, p. 116-7).

Conclusions:

The previous section contained a review of representative research projects which have used an aggregate research methodology to examine the relationship between unemployment and crime. These studies have suggested four possible relationships between the variables and each of these positions has vocal proponents and statistically significant research results. These four possible relationships are as follows:

- 1) a positive correlation: as unemployment increases, crime increases.
- 2) a negative correlation: as unemployment decreases, crime increases.
- 3) neither of the above: no relationship between these variables.
- 4) both of the above: crime increases during good times and bad times.

This degree of chaos and confusion is overwhelming. Every possible relationship between these variables has been proposed and defended. It is stretching credulity for someone to suggest that unemployment and crime are related both positively and negatively at different points in time. Normally, if the

presumed dependent variable continues to increase while the independent variable rises and falls, the logical and normal conclusion would be that no relationship exists between the variables. Surely it is time to stop forcing recalcitrant empirical facts to fit dubious theory. It is also time to abandon the contention that a simple aggregate relationship exists between unemployment and crime.

To be accepted as a valid and accurate statement of reality, a hypothesis in the social sciences generally must meet two conditions. First, the measure of association (i.e., correlation coefficient) between the variables must be significantly different from zero so that one is reasonably sure that the association is not accidental. Second, the hypothesis must be separately tested and validated on independently gathered data sets with the analytical results showing some degree of consistency. The accumulated aggregated research on the association between crime and unemployment has not met these criteria. The only appropriate conclusion would appear to be that there is no aggregate relationship between these variables. This is similar to the conclusion of Jankovic:

More generally, a review of the research on the relationship between economic conditions and crime, conducted over a period of more than a hundred years, suggests a conclusion similar to Vold's (1958, p. 181). There is little evidence that poverty, as such, is positively correlated with crime, and no

evidence at all that changes in unemployment rates are positively correlated with changes in crime rates."

(Jankovic, 1977, p. 117).

The conclusion seems clear - a lot of research effort has been invested in this area and no appreciable or valid evidence of a significant relationship between unemployment and crime has been found. There should be a cessation of aggregate research in this area unless dramatic and potentially productive innovations occur in both the methodologies employed and the proposed theoretical structures.

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UNEMPLOYMENT AND CRIME: INDIVIDUAL-LEVEL ANALYSIS:

Introduction:

In the first half of this report it was pointed out that aggregate research has failed to substantiate the existence of a relationship between unemployment and crime. This conclusion from aggregate research can be interpreted in two ways as far as an individual-level relationship is concerned. The first interpretation is that the failure to find an aggregate link between unemployment and crime means that there is no relationship at the individual level either. The second and most popular interpretation is that there is indeed a positive relationship between unemployment and crime for certain sub-groups of the population even though this relationship exhibits no aggregate manifestation because the characteristics of the small group are completely lost when the groups are homogenized in large-area studies. Given this latter interpretation, it is thus logical and appropriate to investigate the connection between unemployment and crime for well-defined sub-groups of the population using individual-level analysis.

It is quite important that the true impact of unemployment on crime be determined because the implications of such a relationship are very significant. If unemployment can be shown to be a critical variable in the process leading to crime,

then it can be assumed that a program of reducing unemployment will lead to a decrease in crime and recidivism. The policy and program implications of such a relationship are particularly important with regard to high crime groups such as 18-30-year-old males and also recently released inmates. The target groups for programs based on a reduction in unemployment are thus well defined and the human, social and economic benefits of reducing crime and recidivism in these groups are quite significant. But before such programs can be implemented on a major scale, it must be shown that the provision of jobs to crime-prone individuals will indeed alter their criminal behaviour patterns.

Individual-Level Research Methodology:

Individual-level analysis of the relationship between unemployment and crime is very different from aggregate-level research. In the case of individual research each observational unit is a person and measurements are obtained on each variable for each observation. In these detailed studies an analysis is not carried out on the whole population of an area or even on a sample of the population but on well-defined population sub-groups which are known to account for disproportionately large amounts of crime.

If the ultimate objective of the analysis is to specify the behavioural variables which are influential in the process which links unemployment and crime, then it is essential that the

research be carried out using individuals as observations. This would result in a compatible coincidence between the level of detail of the hypothesis and the level of detail of the analysis. It is in precisely this area where much of the aggregate research loses validity, by choosing to investigate an individual-level relationship by means of aggregate data. Caution must be exercised in terms of interpreting individual-level results; the individual-level counterpart of the "aggregate fallacy" is known as the "individualistic fallacy" and this occurs when the results of individual-level research are inappropriately generalized to entire populations.

Individual-level analysis also allows for a much more careful specification of the variables and attributes which intervene between the proposed cause (unemployment) and the expected effect (crime). Aggregate research is usually based on existing institutionally-collected information which only rarely meets the researcher's requirements with regard to mediating and modifying variables. However, because the individual-level researcher is much more likely to collect his data specifically for a particular research project, he is in a position to decide which variables are included in the study. This is important because it means that individual-level research can be much more sensitive to the existence of critical variables which mediate between the attribute of unemployment and the commission of a crime. Individual-level research is thus far more effective in

identifying the important behavioural parameters involved in the criminal process.

At this individual level of analysis, the "research question" linking unemployment and crime takes two forms. The first of these concerns the potential criminality of unemployed persons and is worded as follows: "Is an unemployed person more likely to commit a crime than a person with a job?" The second form of the research question deals with the stabilizing influence of employment on persons known to the criminal justice system and is worded as: "Will the provision of employment to a former prisoner reduce the possibilities of his returning to crime?"¹ Criminologists in general and those concerned with post-prison rehabilitation in particular, have tended to answer both of these questions in the affirmative. This section of the report will examine the empirical evidence for and against this assumption.

1. It should be noted that both of these questions are worded in such a way that they can legitimately be answered by means of individual-level research methodology.

Empirical Results:

The most striking characteristic of individual-level research on unemployment and crime is the small number of studies which have been undertaken. It would seem that a very considerable part of the aggregate research effort should be shifted to the individual level. This step would help to redress a very unequal distribution of effort.

"At the macro-level various statistical trends had been examined and speculative explanations had been put forward, but few systematic attempts had been made to examine the phenomenon at a micro level."
(McClintock, 1976a, p. 69)

This section of the report will examine briefly several studies which are representative of research strategies which have been employed on the question of a linkage between unemployment and crime.

A relatively simple form of statistical analysis involves the search for common offender characteristics. The procedure is to examine the personal attributes of identified offenders, looking for a characteristic which a significant proportion have in common. The inference is then made that these common characteristics are directly related to the commission of crimes. For example, McClintock (1976b, p. 104) describes how 43% of borstal inmates were unemployed at the time of their arrest. A

further 43% of the sample were categorized into an unskilled labour group having relatively poor long-term occupational potential. In a similar search for typical attributes which could be related to criminal behavior, Waller (1974) examined the lives of a group of men released from penitentiary. He found that the great majority of them had poor employment potential.

"Before going to penitentiary this time, more than three out of five ex-prisoners had held a job for at least a year, and more than 80 percent of all jobs held were in the unskilled or semi-skilled categories. More than three out of four ex-prisoners, then, arrived at the institution with no real skill."
(Waller, 1974, p. 194)

In another search for common offender characteristics, a survey of American state prisons revealed the following:

"As of 1974, State correctional facilities were not populated chiefly by the unemployed or indigent. On the contrary, roughly two-thirds of the inmates had held jobs, the bulk of them on a full time basis, during the month before their arrest. Twelve percent had sought employment during that period, whereas 19 percent were not looking for jobs, either because they did not want to or could not work.

(U.S. Dept. of Justice, 1978, p. 44)

These three studies indicate that in general approximately 40% of both juvenile and adult offenders are unemployed at the time of their arrest.

Superficially, the results of these studies could be used to suggest that a state of unemployment could be a significant cause of crime. However, any theory which holds that unemployment is a major cause of crime has to deal with the fact that the majority of the offenders in all of these studies were not unemployed at the time that they committed a crime. Until such criticism is answered it is difficult to believe that unemployment is an independently-acting influence on criminal behaviour.

These studies of common offender characteristics strongly indicate the existence of a syndrome of correlated, coincident offender attributes. Unemployment is only one of these characteristics. McClintock found the following with regard to borstal inmates:

"It was perhaps not surprising to find that poor school behavior and attendance and disappointing educational attainment were frequently followed by indifferent employment histories and serious work problems at the time of committal to penal institution."
(McClintock, 1976b, p. 103-4).

Undoubtedly, similar syndromes of correlated characteristics exist for adults as well. But the methodological limitations of this descriptive analytical approach are such that

only associated variables can be identified. It is beyond the capacity of these descriptive studies of offender characteristics to specify the existence of a functional relationship or to identify the complex linkages of intermediate variables operating between unemployment and crime. But these descriptive studies can suggest important variables for inclusion in more analytic studies. The conclusion from these descriptive studies of offender characteristics is that the employment situation and work history of the offender (along with a considerable number of other variables) appear to be somehow related to the commission of an offence but the exact mechanism remains very much in doubt.

There has also been several more sophisticated analyses which can shed some light on the relationship between unemployment and crime. In an attempt to discover those characteristics of penitentiary inmates which most influenced their re-integration into society and the probabilities of their re-arrest, Waller (1974) conducted a longitudinal study of 423 men released from prison. The data were based on a series of interviews which started while the men were still inmates and ended 2 years after their release. Waller found that having a knowledge of a parolee's post-release employment situation was of no value in predicting when and if he might commit another offence.

"For parolees there are no
post-release employment variables
that are associated with re-arrest."
(Waller, 1974, p. 165)

But for the inmate who was discharged, the situation was very different:

"Employment is an extremely important indicator of whether a dischargee will be arrested within six months rather than at a later period. For this group the variables of employment and whether the dischargee tries to avoid people from before (both of which have correlations of over 0.3) are fairly reliable indicators of whether the dischargee intends to return to crime or not."

(Waller, 1974, p. 165).

These results indicate a considerable amount of specificity in the way that the unemployment variable acts to affect recidivism. Also, the size of the correlation in Waller's study would suggest that unemployment is at best only one of several factors which are involved in recidivism. (The correlation between employment and re-arrest within six months accounts for about 9 per cent of the variation in the dependent variable.)

In order to demonstrate the importance of employment stability and satisfaction in the offender rehabilitation process, McClintock designed a comprehensive research project which included 302 young offenders in Britain. The theory was that unemployment and poor work records were contributing factors in the criminality of young offenders. The solution was therefore to increase job skills and job satisfaction of the inmates and thus

their recidivism rate would be much reduced. In accordance with the theory a comprehensive plan was developed which initially isolated and defined the work-related problems of the young offenders. Once the problem had been identified a course of therapy was designed and implemented. The programs defined for the young offenders included job training, but in addition considerable attention was given to social behaviour, work attitudes and social relations in the work situation. The young offenders were "followed" for a period of two years after their release in order to determine the impact of the training on their subsequent behaviour.

The results of the program were not encouraging:

"Subsequent employment patterns were often unsatisfactory: on nearly half the cases there was either unemployment or very frequent job changing. Comparing previous and subsequent work patterns it was possible to identify thirty-five per cent who had improved, while twenty-three per cent had deteriorated. The apparent lack of real impact made by the modified regime on subsequent employment was confirmed when the number of those who had acquired high skills in vocational training, and those whose work effort at the penal institution was outstanding, were found to contain very similar proportions of improving and of deteriorating work patterns to those of other offenders."

(McClintock, 1976b, p. 125).

McClintock's conclusion from this study was that for young offenders the relationships between unemployment, mis-employment, under-employment and crime were more complex than he had predicted.

In an American test of the impact of employment on recidivism, the Vera Institute of Justice felt that the crime rate among heroin addicts could be decreased significantly if the addicts could be given new skills, self-confidence and good work habits. The Institute set up the Wildcat Service Corporation which hired addicts and ex-offenders to perform community service work. These employees of the Wildcat Service Corporation were paid hourly salaries from a fund which was established by the pooling of grants, welfare payments and moneys received for the performance of labour. The intent of this supported-work program was to prepare addicts and ex-inmates for unsubsidized jobs in the regular labour force.

After three years of operation, a test was conducted to determine what effect the Wildcat program was having on its employees. The results, while not as good as the Vera Institute had hoped, nevertheless suggested reason for some optimism:

"Analysis of the data shows that the Wildcat participants have worked more, earned more and been less dependent on direct welfare payments than the controls. Most experimentals wanted to be employed at Wildcat and came regularly to work (they worked an average of 39

weeks the first year), while the controls had difficulty finding and keeping jobs (they worked an average of only 12 weeks the first year). All of this affirms the major hypothesis of supported work: under the right mix of conditions, many "unemployable" ex-addicts can and will work, and the transitional experience will make some lasting difference."

(Vera Institute of Justice, 1977, p. 71)

The impact of the Wildcat Service Corporation on the criminal recidivism of its employees is less clear:

"In the first year, experimentals were arrested less often than controls - 19 percent of them were arrested, compared to 31 percent of the controls. Subsequently, this difference narrowed. Thereafter, although experimentals were arrested as often as controls, they were less likely to be imprisoned."

(Vera Institute of Justice, 1977, p. 71)

The results of the Wildcat project would suggest that the impact of supported-work projects on the recidivism rates of offenders is neither simple nor direct. A considerable number of variables would appear to be operating in the system and more research is necessary to discover their effects and interactions.

The Vera Institute chose a controlled experimental research design to test the effectiveness of its Wildcat Service Corporation. This is a very powerful methodology for validating a functional relationship between two variables, in this case

recidivism and participation in the program. In this type of study, the researcher attempts to control all independent variables by means of random allocation of subjects to research groups. Thus any change in the dependent variable (in this case recidivism) can be attributed to the fundamental difference between the experimental and the control groups (in this case, participation in the program).

The positive results of the Vera Institute have not been generally replicated in other projects designed to improve the employability of released offenders. Lipton (1975), in his survey of the effectiveness of correctional treatment, concluded that prison educational and vocational programs have not consistently reduced recidivism. Clarke (1974) found no reduction in the arrest rates for youths who were offered employment in the Neighbourhood Youth Corps program. Leniham (1976), in studying the impact of stipends and employment efforts on the criminality of released offenders, found some positive effect among older offenders but not among younger ones. He found a slight reduction in property crime, but no effect on robbery or other crimes.

Witte (1979) has written a recent survey of the theory and individual-level empirical evidence which links unemployment and crime. She has examined the thinking which is concerned with the nature of the labour markets for individuals who have committed crimes and also the results of programs to improve the

labour market performances of recently-released offenders. In general she concludes that unemployment is too gross a concept for this research; that we need to consider more than just the absolute existence of jobs.

"First we must broaden our perspective in the sense that we must consider the whole issue of economic viability, rather than just employment per se. In addition we must consider the quality of jobs as well as simply whether an individual is employed".

(Witte, 1979, p. 15).

"Individual research provides more support for the potential effectiveness in reducing crime of either providing economic viability directly (e.g., cash payments) or providing rewarding work experiences (e.g., supported work, desirable jobs) than for simply reducing the unemployment rate".

(Witte, 1979, p. 16).

In 1977 the Vera Institute of Justice applied for and received a major grant from Law Enforcement Assistance Administration to investigate thoroughly the relationship between unemployment and crime. At the present time they are completing the literature search and have proposed a number of research projects, mostly at the individual level, to clarify the importance of employment in reducing crime. This is a major task and a difficult one. Their final report is not due until 1982 although preliminary results will be released sooner. Their report should have a very great impact on the development of pre-arrest crime reduction strategies and post-release rehabilitative programs.

Conclusions to Individual-Level Studies:

This section of the report has reviewed individual-level studies of the association between unemployment and crime. The general intent of the studies has been to demonstrate that an unemployed person has a higher probability of committing a crime than an employed person or to demonstrate that the provision of employment to a former offender will act to reduce the chances of him recidivating. A number of general conclusions can be drawn from an analysis of these studies.

The most striking characteristic of individual-level research on unemployment and crime is the small number of studies which have been undertaken. This is particularly significant when one considers the potential human and economic benefits of identifying the specific linkages through which the employment variable influences criminal behaviour. The research results of these studies have not been consistent. Some inconsistency is to be expected because different population sub-groups have been studied, but as yet no clear picture of the association between these variables has emerged. The partially positive results of the Vera Institute's Wildcat Project are balanced against a larger number of studies which indicated no relationship between

employment and crime. In order to clarify the situation there should be a redistribution of research effort from the aggregate level to that of the individual because the important question in this area of study is couched in terms of individual behaviour. It is to be hoped that the current Vera Institute research will answer the questions which have been raised.

From an examination of these studies it is also apparent that a univariate explanatory model of the relationship between unemployment and criminality is not sufficiently sensitive to the intricacies of reality. The empirical results of Waller, McClintock and the U.S. Department of Justice indicated that fewer than half of persons arrested are unemployed at the time of arrest, indicating that employment status is only one of several possible contributing factors to criminal behaviour. It is clear that the appropriate model to use in understanding criminality is a multi-variate systems model, where organized complexity is the norm. Unemployment per se may be a significant variable within such a system but is only one of many factors.

A third general characteristic of this research is a poor level of theory formulation and specification. This criticism is true for aggregate studies also but is much more important in the case of individual-level studies. These studies purport to examine impact that the variable of employment has on something as complex and convoluted as human behaviour.

But there has in general been no attempt made to specify the intervening and modifying characteristics which influence the association between these variables. For example, one possible hypothesis is that a state of unemployment leads to economic deprivation which in turn leads to criminal behaviour in some individuals. This would suggest that unemployment acts through economic need to produce a breakdown in normal, law-abiding behaviour. Another possibility is that the lack of a job means a lack of a tie or involvement in society, so it enables persons to drift into crime. There are other theoretical possibilities but very rarely are these hypotheses clearly enunciated and specified in the empirical research. Progress will be very limited until these fundamental steps in the process of theory specification are completed.

In general then, individual-level research on the association between unemployment and crime has received an insufficient amount of attention in view of the fact that programs based on the assumed relationship between these variables are being considered for implementation. At present there would appear to be enough evidence of a link between unemployment and crime to justify a major research effort, but not enough support to suggest a large national program to provide jobs to crime-prone persons. It is possible that unemployment is a significant influence on criminality, but its effect has yet to be empirically defined by a number of researchers.

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