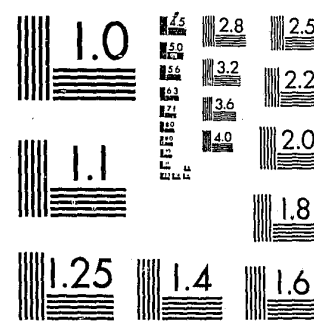


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**CORRECTIONAL POTENCY:
TREATMENT AND
DETERRENCE ON TRIAL**

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MINISTRY OF CORRECTIONAL SERVICES

PROVINCE OF ONTARIO



PLANNING AND SUPPORT SERVICES DIVISION

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Abstract

The claim by some of the "nothing works" proponents that deterrence offers more potential than the failed treatment model for the rehabilitation of offenders is critically examined. The recent treatment and deterrence literatures are compared on three dimensions: reductions in criminal behaviour, cost-effectiveness, and methodological rigor. The available evidence indicates that the treatment literature is more potent in each comparison made. It is also suggested future deterrence research must incorporate psychological variables and theory, the experimental literature on punishment and apply, at the very least, quasi-experimental designs to become viable and applicable. Finally, it is argued that the methods and conceptualizations underlying treatment and deterrence are not as disparate as they might appear. Indeed, they show many common problems and characteristics. As this realization becomes apparent then significant gains in the rehabilitation of offenders may accrue.

I INTRODUCTION

Several well publicized reviews of research on the rehabilitation of the offender have concluded that treatment is "impotent" - in correctional rehabilitation, "almost nothing works" (e.g. Lipton, et al, 1975; Martinson, 1974; Robison & Smith, 1971; Wright & Dixon, 1977).

Treatment, it has been proclaimed, is not only an ineffective and expensive approach to the problems of crime, it is also inappropriate. Most treatment programs are based on situational, personality, and social learning theory conceptualizations of the causes of crimes and these approaches have traditionally been ruled out-of-bounds for serious criminological study being as they are supposedly anti-sociological and even immoral (cf. Hirschi & Hindelang, 1977).

The rejection of the rehabilitation model, it has been argued, will allow the criminal justice system to improve its effectiveness by implementing crime control policy and programs derived from more meaningful models (cf. Empey, 1979).

Indeed, Martinson (1976) has stated that we should rejoice at the demise of the "theoretical barrenness", "rank opportunism" and "fraud" which, he proclaimed, characterized the correctional treatment era and should welcome the dawning of the "new epoch in corrections" in which crime will be controlled effectively and economically through deterrence. ²

Martinson is not alone in his enthusiasm for deterrence. Pontell (1979) has claimed that there is consensus among deterrence researchers that sanctions deter crimes and, with Tullock (1974), van den Haag (1975), Wilson (1978) and others, has urged the

practical application of deterrence.

It is our view that the criminal justice system must avoid another bout of the diseases from which it has long suffered (cf. Ross & McKay, 1978): 1) Panaceaphilia - an uncritical headlong rush to adopt remedies which are touted as cure-alls, 2) negativitis - a total repudiation of the remedy when it fails to live up to the overly optimistic promises which heralded its introduction. Treatment programs were accepted both wholeheartedly and foolhardily as the answer to crime. When they appeared to fail to deliver, treatment was denounced intoto, and even effective programs were repudiated or ignored by critics eager to throw out the dirty bathwater ... and the baby.

Lest we forget, it is imperative that the claims of the deterrence advocates be carefully appraised before we rush to endorse this 'new solution' to the problems of crime.

Recently some cautions have been voiced by those who argue that the purveyors of the deterrence doctrine have oversimplified and distorted the effects of deterrence (e.g. Halleck & Witte, 1977) and have warned that the conclusion that sanctions deter crimes is a "grievous rush to judgement" (Gibbs, 1979).

It is ironic that those who have been most vociferous in promoting deterrence while decrying treatment have apparently deemed it unnecessary to compare the relative power of the two strategies. Does deterrence work in practice any better than existing alternatives has been a neglected question (cf. Henshel, 1978). Fear of facts has been a problem in the evaluation of the treatment literature (Marquis & Gendreau, 1979), now it appears to have

generalized to some deterrence proponents.

Any further polarization of the issue of whether to treat or deter offenders should be avoided at all costs. In this paper we will provide a comparative analysis of the deterrence and treatment literatures.³ The dimensions on which the comparison are based center on the magnitude of results as defined by reductions in recidivism, crime rates and social gains, the cost-benefit of deterrence and treatment programs and the adequacy of the respective research in regard to methodological sophistication. In the analysis we will be addressing ourselves not only to researchers but also to correctional practitioners and policy makers whose task it is to make sense of the voluminous literature. Fortunately, for our purposes, there have been recent comprehensive reviews of most of the literature in both areas (cf. Blumstein, et al, 1978; Gendreau & Ross, 1979; Ross & Gendreau, 1980; Sechrest, et al, 1979). We will be drawing from this literature, some more recent sources, and key papers that these reviews did not touch upon.

II IMPACT

We begin our discussion with a consideration of the relative impact of treatment and deterrence. To what extent do they achieve the effects they are designed to engender? How much crime does general deterrence deter, how much recidivism does treatment prevent?

Some readers might be surprised that we would ask such questions. Many would consider it axiomatic that punishment will prevent transgression, and would assume that the magnitude of its success will vary directly with its certainty and its severity. In contrast, treatment "almost never works" and in those rare cases where

it does, its impact on recidivism is less than impressive. Such is the conclusion "in vogue". It is both naive and erroneous.

Treatment is impotent?

Treatment advocates must acknowledge some sobering facts:

1) for whatever reason, many programs conducted in the name of treatment have failed to demonstrate positive outcome; 2) some programs have had negative outcome i.e. deleterious effects; 3) some programs which have been labelled "successes" have achieved results which may be significant in a statistical sense but are hardly significant in terms of the magnitude of their effects. Those who base their rejection of correctional treatment on such facts and call for a return to deterrence seem to be ignorant of at least two additional facts: 1) as we shall see, the validity of the foregoing statements would be reduced not at all if the word, deterrence, were substituted for the word, treatment; 2) there is an increasing number of treatment programs which have been shown in methodologically adequate studies to have significant and major positive effects in preventing crime and/or in reducing recidivism (cf. Gendreau & Ross, 1979; Ross & Gendreau, 1980). Reductions in recidivism ranging from 30 to 60% have been demonstrated in some well controlled studies (Alexander & Parsons, 1973; Chandler, 1973; Lee & Haynes, 1980; Phillips, et al, 1973; Ross & McKay, 1976; Walter & Mills, 1979). These are not just short-term benefits. Significant beneficial effects of treatment have been shown in several studies to persist over long follow-up periods. For example, O'Donnell, et al, (1980) demonstrated reductions in recidivism as high as 22% three years after the inauguration of their counselling

program. Similarly, Sarason (1978) reported 25% reductions in recidivism three years after inaugurating his social learning program in a correctional institution. Jeffrey & Woolpert (1974) documented 20% reductions in recidivism of their employment program four years later. Blakely, Davidson & Saylor (1980) recently reported that their experimental subjects were still superior to their control subjects 10 years after inauguration of their behaviour modification program. In a recent follow-up of their vocationally oriented psychotherapy program Shore & Massimo (1979) found that the significant superiority of their treatment group over controls persisted for 15 years.

Some treatment studies have reported dramatic results in terms of decreases in proportion of offenses. Doctor & Palikow (1973) made reductions in probation time contingent upon gaining employment. Probation violations decreased from 1.7 to .15 per year and new arrests decreased from 2.0 to .15 per year. Hayes (1973) gave alcoholic offenders the option of a jail sentence or one year probation with antabuse and obtained a decrease in arrests from 3.8 to 0.3. Seidman, et al (1980) reported a decline in police contacts from 4.4 - 1.3 after 2 years for juveniles enrolled in a multi-faceted diversion program.

In addition, a number of treatment studies have provided impressive gains on other important dimensions such as education, employment, and a variety of coping and socialization skills (Collingwood, et al, 1976; Davidson & Robinson, 1975; Doctor & Palikow, 1973; Douds, et al, 1977; Lee & Haynes, 1980; Patterson, 1974; Phillips, et al, 1977; Shore & Massimo, 1979; Wade et al, 1977; Walter & Mills, 1980).

The case for the impotency of treatment has not been proven.

Deterrence is potent?

A substantial number of studies have found inverse correlations between crime rate and deterrence variables such as clearance rates, arrest probabilities, per capita police expenditures, and probability of imprisonment. At first glance it would seem that these studies have established the potency of deterrence. However, the magnitude of the deterrence effect in most of these studies is, like the magnitude of treatment impact, quite small. Although Logan (1972) reported a correlation between certainty of punishment and rape of $-.53$ and Erickson & Gibbs (1976) reported a correlation of $-.66$ between certainty and burglary, the vast majority of correlations are quite low, often accounting for at most 10% of the variance (Bailey, 1976; Bailey & Lott, 1976; Bailey & Smith, 1972; Erickson & Gibbs, 1976; Pontell, 1979; Logan, 1972). Moreover, some of the correlations supporting deterrence are not consistent across different crimes or for the same crime across different studies e.g., one study of burglary will be inversely correlated with certainty of punishment at a significant level but not in another study. Or, negligible effects are reported e.g., research on the death penalty (Black & Orsagh, 1978; Sellin, 1980) and in some of the data reported in the above noted studies the correlation is in the wrong direction (e.g., Bailey, 1976) - increased sanctions sometimes correlated with increased offending! While deleterious effects have been found in treatment research they are not foreign to deterrence. In what we consider to be one of the

most thoroughly evaluated attempts at deterrence, Hart (1978) reported that sanctions in army units increased violations of regulations!

Studies examining the effect of sanctions on self-reported delinquency (e.g., Erickson, et al, 1977; Teevan, 1976 a,b) have also reported weak negative correlations (often less than $-.20$) between deviant behaviour and perceptions of certainty of punishment. Moreover, in these studies the magnitude of the deterrence effect (if there was an effect) depended on which deviant behaviour was being measured.

Studies of the effects of incapacitation on crime rates yielded mixed and often contradictory results, but most data indicates little effect. The most optimistic estimates have been from Shinnar & Shinnar (1975) who claimed that if incapacitation were increased substantially there would be a twofold to fivefold decrease in crime. On the other hand, Petersilia & Greenwood (1978) have produced less optimistic data. They reported that for a 1% reduction in crime, prison populations would have to increase by 3 to 10%. They also found that mandatory sentencing policies that focussed only on offenders with prior records were less efficient than for first offenders. Indeed, proponents of mandatory sentencing policies would argue that the opposite result should occur.

In marked contrast, Clarke (1974), Ehrlich (1973), and Greenberg (1975) estimate that at best only a 5 to 10% increase in crime would result if incapacitation were reduced or eliminated. Cohen (1978) reported that in order to obtain a 1% reduction in crime, prison populations would have to be substantially increased particularly in high crime states such as Massachusetts and New York which would have

to increase their prison population by almost 30%. Van Dine, et al, (1977) and Van Dine, et al, (1979) have been the latest to pursue an analysis of incapacitation effects. Their results support the earlier pessimistic estimates of likely incapacitation benefits. In fact, their test of the optimal incapacitation procedure (which incapacitates all violators, not just chronic offenders) reduced violent offenses by only 4%. And, in doing so, 90% of those confined would not have committed a violent offense if they had been subject to normal sentencing procedures.

In summary, while it is quite legitimate to argue that in the best of all possible theoretical worlds an increase in apprehension and conviction of offenders by tenfold would possibly reduce crime rates fivefold (e.g., Shinnar & Shinnar, 1975), in reality, it is not a simple matter to introduce the requisite change in the criminal justice system. Apprehension is a police function and not particularly flexible; conviction is a prosecutorial and judicial function and the rules of evidence and procedural guidelines are not easily changed. There are also limits to the amount of imprisonment a society is willing to use (Blumstein, et al, 1975).

But, it might be argued, we should be most concerned about deterring the major crimes - crimes of violence. These should be deterred by the selective incapacitation of violent offenders. To date, the data in regard to selective incapacitation are particularly despairing. Wenk (1972) found that for every correct identification of a potentially aggressive individual there were 326 incorrect identifications. Eighty-six percent of the subjects identified as violent did not commit a violent act while on parole. For every 20 predictions there were 19 cases that would be incorrectly identified as being potentially violent. Kozal (1972) reported a 65% false

positive rate - 65% of the sample would be predicted to be violent when in fact they were not so. Coccozza & Stedman (1976) found that 14% of their dangerous group and 16% of their non-dangerous group were later rearrested for violent offenses.

There are also some current avenues of applied deterrence research which have not lived up to their initial promise. For example, shock probation has recently been touted as an effective deterrent method ⁴ but these studies to date have been primarily descriptive (e.g., Potter, 1977) and what empirical evidence does exist found that shock probation was no more effective than other sentencing options and was not even effective for first incarcerates who would be the most obvious target group for such a program (Waldron & Angelino, 1977).

Cracking down on traffic offenses might have appeared to be a fruitful area for the demonstration of deterrence effectiveness. The problem can be relatively well defined and controlled in select jurisdictions. The available evaluations, however, point to the fact that there are real complexities in interpreting the effectiveness of deterring traffic offenses (Campbell & Ross, 1968; Ross, 1973). In one case, when severe penalties initially were set up to deter illegal traffic behaviour, the legal system responded in opposition. As Ross (1976) commented, the "law of inertia" effectively prevented the application of severe penalties.

The imposition of very severe sanctions has often been promoted by deterrence proponents but rarely applied. The Jamaican legislation providing for indeterminate prison sentences for possession of fire-arms has been one of the few attempts at employing the full power of

the law, courts, and police. Marked decreases in several crimes, particularly homicide, immediately after inauguration of the laws, appeared to initially support deterrence effectiveness but evaluations of the program a year later were equivocal about a direct deterrence effect of any substantive nature (Gendreau & Surridge, 1978).

The Nashville police deterrence studies (Schnelle, et al, 1975, 1977, 1978, 1979) are, in our opinion, the most carefully documented attempts at deterrence. These studies report equivocal results of sanctions on criminal activity. While Schnelle, et al, reported that helicopter patrols were effective; car patrols produced mixed results and the use of various hardware techniques e.g., alarm systems, were not effective.

Finally, we should note that the treatment literature contains many studies documenting not just reduced recidivism but other social benefits (e.g. employment stability, improved family relationships etc.). There are no deterrence studies documenting such gains.

Viewed in the light of the research evidence as to the impact of treatment and deterrence programs, it appears that the argument about treatment vs. deterrence is not as black and white an issue as has been thought. A case could be made that some treatment programs may yield more powerful effects than deterrence procedures. However, many additional matters must be considered before that conclusion can be accepted. For example, one has to examine the reliability of the effects that have been claimed by assessing the adequacy of the research on which such claims are based and one needs to ask what costs are incurred in achieving these effects.

III Cost-Benefits

Many correctional managers welcomed the news that treatment did not work. It meant they could get out of the treatment business

and into the management business, and do so with impunity. It would be difficult to criticize the correctional manager who declined to provide services which offered little benefit. Moreover, in times of austerity correctional agencies, which seldom have a high priority in government funding, could ill-afford the luxury of large numbers of high-priced therapists. An implicit assumption that was made was that treatment meant professionals and, therefore, high costs. Given high costs with little benefits no self-respecting manager could support the continuation of the correctional treatment model. Deterrence, on the other hand, does not require professionals and, assuming its greater efficacy, represents a wise alternative investment. Or so it seems ...

The price of treatment

It should be noted that the treatment studies have usually not involved large samples, but there are some notable exceptions. Some effective studies have sample sizes ranging from over 500 to close to 1400. (Baron, et al, 1973; Douds, et al, 1975; Jessness, 1975; O'Donnell, Fo & Lydgate, 1977).

Although there are few adequate cost-benefit studies of correctional programs conducted by professionals, we would not quarrel with the view that treatment services requiring professional staff can be expensive. On the other hand, impressive gains can be achieved by treatment programs in which service is not provided by professionals. Some of the most effective treatment programs have used non-professional, but well-trained, unpaid or minimally paid volunteers as behaviour change agents. A model system of such low-cost service delivery is the "triad model" which treats offenders by deploying non-professional adults trained by graduate students earning

course credits who are, in turn, supervised by a professional in universities, and government, or private agencies. Such programs have been shown to be highly cost-effective. For example, Wade et al, (1977) with a paid staff of only one full-time coordinator/counsellor, provided family services through unpaid graduate students to 321 offenders in a four year period with reduced recidivism rate of up to 53% (for second offenders) compared to the previous year. Other examples of low-cost effective triad-like systems are those Andrews & Kiessling, 1980; Fo & O'Donnell, 1974; Lee & Haynes, 1980; and Seidman, et al, 1980.

Nor can one assume that a program which does not offer professional treatment is likely to be a more reasonable financial investment than one which does. Many effective treatment programs are actually cheaper and more effective than standard correctional fare. Phillips et al (1973) have reported that their multi-faceted treatment programs in the Achievement Place group homes were 75% cheaper to develop and 50% cheaper to operate than institutional programs. Davidson & Robinson (1975) stated that it cost approximately \$480.00 per subject in their community-based behaviour modification program vs. \$800.00 for training school and \$5000.00 for private institution treatment. Stratton (1975) claimed his crisis intervention program was 2.11 times cheaper while Blakely, Davidson & Saylor (1980) stated their Kentfields treatment program cost just 8% of that of traditional institutional placement. Palmer's (1975) diversion program reported a cost of \$80,000.00 vs. an estimate of \$725,000.00 if their program was not put in place Baron & Feeney (1973) stated that their work program cost \$29.00 per project subject, vs. \$222.00 for control subjects. For subjects who

had repeat bookings the respective costs were \$170.00 vs. \$405.00. Witte (1977) examined a work release program in North Carolina and reported work release resulted in approximately a \$2000.00 net gain to society per inmate. McGuire & Witte (1979) examined cost effectiveness of correctional institutions and demonstrated that the larger institutions with more rehabilitation services were actually cheaper than those lacking such services. Prisons with no rehabilitation services have a 13% higher cost. Even the provision of treatment services on a community based diagnostic program has been shown to have substantial cost-benefits over institutional care (Cox, et al, 1977).

What price deterrence?

Deterrence procedures, obviously, cannot rely on volunteers unless one accepts the hypothetical deterrence program of Wilks & Martinson (1976, see footnote 2) as being credible. On the other hand, they do not require high-priced therapists. But if they are to be effective, they demand increased mobilization of the police, courts and/or prisons. That can be expensive. Cohen (1978) commented that if one were to assume the most optimistic effects of incapacitation on crime rates it would be necessary to increase the prison population in New York State, for example, by 355 - 567%. It boggles the mind to estimate how expensive it would be to manage a prison system that increased by several hundred percent. In an actual study done on the effects of severe incarceration policy, Van Dine, et al, (1979) found that if every first offender was given a five year sentence the Ohio prison system would increase by 5 times (with a resultant 4% decline in violent offenses).

We have often encountered a delightful but alarming idealism (or naivete) in those who argue the cost-benefits of deterrence. Zimring (1978) stated that certainty of apprehension is not a unitary concept and an additional dollar placed on patrol cars does not guarantee that an additional offender will be arrested or convicted. He stated that it is ludicrous to assert, as some do, that adding 32 million to police or court budgets would prevent the loss from felonies by 83 million (Ehrlich, 1974).

Schnelle et al (1977) have conducted the most exacting cost-benefit analysis of deterrence programs. Whereas they found that increasing police surveillance by helicopter patrols was cost effective, increasing car patrols yielded only marginal effects and was far too expensive to be feasible for city-wide implementation; it would have quadrupled costs!

In the past, cumbersome and economically exotic bureaucracies have been built up in the pursuit of high quality and high visibility treatment services, but there is no reason to believe that such would not be the case if governments became involved in applying deterrence. There is abundant evidence that markedly increasing the efficiency of the police and the courts is not easy to achieve, and increased deterrence activities have usually involved marked increases in incapacitation. Regardless of other considerations such an undertaking can be impressively expensive. Those states that have dramatically increased the capacity of their prison systems in order to cope with increasing crime illustrate this point (Nagel, 1977). Interestingly, those states that have done so experienced slightly higher crime rate increases than those which have spent very little

money on incapacitation.

The available evidence seems to indicate that treatment programs are cheaper to implement and maintain than deterrence programs. However, in the criminal justice system, statements about cost effectiveness are, typically, little more than speculation. Assessing correctional costs and program benefits is a highly complex matter and the available evidence is limited both in quantity and in quality (Adams, 1977; Weimer & Friedman, 1979). But the case for deterrence still has not been made and, based on the evidence on costs, the case for treatment may be more appealing.

IV METHODOLOGICAL RIGOR

If the case for deterrence cannot be made on the grounds of the evidence of efficacy and cost-benefits, at least, it might be thought, what evidence there is is derived from quality research, whereas treatment research has been woefully inadequate. In this section we wish to examine the relative merits of research on treatment and deterrence.

Treatment

Many previous reviews of the treatment literature have lamented the fact that only a small proportion of the studies have involved adequate research procedures. Until recently, disconcertingly few studies have entailed truly experimental studies with randomized treatment and control groups (Bernstein, 1975; Logan, 1972; Sechrest, et al, 1979). In addition, many studies suffered from small and unrepresentative samples, inadequate use of statistics, and a variety of problems in follow-up ranging from subject attrition to lack of sensitivity of outcome measures (e.g., Emory & Marholin II, 1977; Rezmovic, 1979; Waldo & Griswold, 1979). There also has been

marked failure to consider important interactions between offender characteristics, situations, settings, time of measurement and treatment (Gendreau, et al, 1979; Glaser, 1975; Palmer, 1975; Repucci & Saunders, 1978; Rezmovic, 1979; Warren, 1977). McCleary, et al (1979) have argued that some correctional programs have been confounded by regression to the mean by selecting biased i.e., high offending subjects, for treatment.⁵ With such pre-selection of subjects there would be a good chance that the treatment group's offense rates would naturally decrease over time.

Correctional treatment research has all too often been characterized by a poor theory development, little attempt to build upon presently available knowledge or to apply useful treatment modalities from other social science areas, not enough treatment, failure to specify links between program input and outcome, placing the treatment in an entirely inadequate environment within which to demonstrate effects, and a bastardization of programs so that they fail to adhere to the treatment principles and procedures they purport to evaluate (Andrews & Kiessling, 1980; Bassett & Blanchard, 1977; Berleman & Steinburn, 1969; Chaneles, 1976; Gendreau & Ross, 1979; Glaser, 1975; Milan & McKee, 1976; Palmer, 1978; Ross & McKay, 1978; Sechrest, et al, 1979, a, b).

Many of these problems represent a lack of program integrity, or the failure of experimenters to exactly specify their treatment procedures and monitor them so that they can assure us that what they proposed to evaluate was actually carried out (Palmer, 1978; Quay, 1977; Sechrest, et al, 1979). But these problems are not unsolvable. For example, Rezmovic (1979) and Sechrest, et al (1979) have provided useful guidelines for researchers to adhere to in the

future to guard against such inadequacies.

The foregoing refers to specific treatment experiments. At a broader level there are other reasons for the failure of treatment programs. Municipal, state, and federal government agencies responsible for the delivery of services have all too often failed to carry out their mandate because of capricious changes in policy and treatment ideology, political expediency which sometimes prohibits the possibility that the programs will not be effective even before implementation. Lack of success may also be attributable to a lack of concern with the level of service or a failure to integrate the services of various agencies in any meaningful way (Berk & Rossi, 1976; Bassuk & Gerson, 1978; Gendreau, et al, 1979; Gendreau & Ross, 1979; McDougall, 1976; Rappaport, et al, 1980; Ross & Gendreau, 1980). When successful treatments are taken from their developmental site and implemented elsewhere they are often weakened (cf. Borush & Gomez, 1977). This is not an indictment of treatment programs per se, but rather an indictment of their administration. Nevertheless, there is a growing awareness that the variables crucial to maintaining correctional programs should be documented. For example, Gendreau & Andrews (1979) enumerated some of the pitfalls encountered in the development and maintenance of treatment services in corrections.

Given the above, it may be the height of understatement to assert that things are getting better in regard to the methodological adequacy of treatment research. In our review of the treatment literature a greater percentage of studies were found - in comparison to past reviews - that were randomized experiments (Gendreau & Ross, 1979). Thirty-three percent of the correctional

studies we reviewed were randomized, while 23% employed a variety of baseline comparisons, 16% employed matched groups, 9% a variety of comparison groups, and 19% had weak controls. In addition, some more recent studies were described in a compendium (Ross & Gendreau, 1980) of methodologically exemplary programs (e.g., Andrews & Kiessling, 1980; Barkwell, 1980; Blakely, et al, 1980; Collingwood, et al, 1980; Kloss, 1980, Lee & Haynes, 1980; O'Donnell, Lydgate & Fo, 1980; Platt, et al, 1980; Seidman & Rappaport, 1980; Shore & Massimo, 1979; and Walter & Mills, 1979).

Sechrest, et al (1979) have provided several criteria which are important in assessing the integrity of services delivered. Besides operating under a solid theoretical base linking implementation to output, the adequacy of treatment depends on the qualification of staff, intensity of contact, length of contact, focus of treatment, clarity of treatment plan, and differential assignment of patients. The above studies meet many of these objectives. We do not imply that methodological utopia has been achieved. Each study has some specific methodological weakness. Nevertheless, they represent a substantial improvement over what has been reported in the past.

Deterrence

Deterrence is such a deceptively simple concept. Maybe it is this simplicity that has led proponents of the new deterrence epoch to mistakenly assume that cause and effect relationships between criminal sanctions and crime rates have been well established. Unfortunately, there is not a single study in the whole deterrence literature which could support a cause-effect conclusion! Even the sophisticated new statistical techniques (path analysis; causal

modelling) cannot provide a basis for causal statements to be made about the association between crimes and sanctions (e.g., Gibbs, 1978; Pontell, 1978; Tittle, 1978).⁶ The great majority of deterrence research is based on post-hoc interpretation of aggregate-cross-sectional data. It is highly doubtful whether research using these kinds of data can ever succeed in identifying or estimating the effect of sanctions on crime rates (Nagin, 1978). In fact, crime rates may affect sanctions (Blumstein, et al., 1975).

There have been valiant and imaginative attempts to sort out what is, in effect, a circular problem (Logan, 1975), but the available statistical techniques however powerful, are just not an adequate substitute for the randomized experiment. Even the most liberal supporters of such statistical techniques would admit that they do not allow for the determination of the direction of causality between two variables, nor do they allow one to conclude a causal relationship exists except under a "restrictive set of conditions" (Asher, 1976). Moreover, this "restrictive set of conditions" requires the researcher to make a variety of simplifying assumptions and to proceed on an "as if" basis. It is a most tenuous "as if". Henshall (1978) lists 15 events that affect the assessment of the crime-sanction equation. The researcher in the area is faced with the problem of arbitrarily eliminating various variables, such as age and economic status, on the assumption that they might affect crimes or sanctions but not the other. However, there is little consensus as to what extra-legal variables should be controlled. Often restrictions employed in studies have had little theoretical or empirical basis for selection (Fisher & Nagin, 1978).

Three other serious problems can seriously confound any interpretation of the effect of sanctions on crime rates: 1) In some jurisdictions it is not surprising to find the police, at times, varying their recording practices of offenses and, as a result, under-recording reported crimes; 2) plea bargaining to obtain a conviction on a less serious offense is also common; 3) the increased use of prison to get high rate offenders out of circulation is also common. These factors are most likely to occur in jurisdictions already overburdened by high crime rates. It is in these high crime rate areas that one would most like to be able to demonstrate deterrent effects of sanctions on crime. But, the effect of these problems is to confound the relationship between sanctions and crime and if anything, to over-estimate the inverse correlation between sanctions and crime rates. To date there are no ready solutions to adequately control for these confounding effects.

The issue of incapacitation is a separate topic in itself. There are two types of incapacitation, selective and collective incapacitation. The former refers to incapacitation of very specific types of offenders, particularly ones with long criminal histories of violent behaviour, while the latter refers to broad sentencing policies that apply to anyone convicted of a crime. Establishing the efficacy of selective incapacitation is a relatively complex matter. What is needed (but seldom provided) is a test of how well one can predict specific types of criminal behaviour to occur in the future. In the case of general incapacitation, however, there are more substantial methodological equations to determine the effectiveness of general incapacitation. It is particularly crucial to assess how

accurately one can measure the individual crime rates of individuals while free in society. To date, there have been no empirical estimates of the distribution of individual crime rates. Rather, what researchers have done in the area is to make assumptions about crime rates. These assumptions vary widely from conservative to liberal estimates. Not surprisingly, given the assumptions in this regard, there are dramatically varying estimates of the effectiveness of incapacitation (Clarke, 1974; Shinnar & Shinnar, 1975). The only real solution to the problem in this area is to actually determine from individuals' self-reports their crime rates while free, and the probability of their being apprehended. How accurate such data would be and how well such data could be obtained remains highly problematic.

Treatment programs have been rightly criticized for their lack of integrity, but whenever deterrence has been applied the same lack of integrity has also occurred. An illustration of this is seen in Zimring's (1978) condemnations of the evaluations of applied deterrence for their profound failure to operate under any well conceptualized and defined theoretical base. If anything, a trial and error methodology has predominated, or as he put it "getting tough to see what happens" regardless of the morality. Therefore, the lack of explicit theoretical models has contributed to the development of some deterrence projects that had little face validity and no appreciable long term effects. For example, Zimring reported that one project's goal was to reduce crime rates by a specified amount with no explicit rationale as to how to credibly do so. In another case an alcohol safety action program was expanded enormously

at substantial cost without ever having stabilized and proved itself in the initial development site.

The applied deterrence studies all suffered from weak evaluation designs, most had no controls whatsoever, and baseline data if available was crude. One of the interesting measurement problems that surfaced occurred in a high impact anti-crime program where the police were given incentives to change officially reported levels of crime. Given that kind of confounding, the only other alternative would be to carry out victim surveys. Even in this case it appears that sometimes victim survey data may be inferior to police statistics. Where they can be done adequately they are often extremely expensive and thus either not done at all or carried out on very small samples. The lack of time to adequately follow up outcome data has been another crucial problem. Zimring (1978) noted that the Kansas City preventive patrol experiments are looked upon as the definitive experiments in applied deterrence when in fact they are at best only pilot projects.

In corrections the application of some therapies have been bastardized or distorted such that they promote a strong reaction against the program by the clients resulting in deleterious effects on their behaviour (Ross & Price, 1976; Ross & McKay, 1978). The same can occur when applying deterrence. Hart (1978) found an increase in undesirable behaviour when punishment was implemented in select army units. There was little consensus between superiors and subordinates over offense rates, racial discrimination was evident in punishment decisions, and enlisted soldiers felt that punishment was handled unfairly and was even applied more frequently within units that had good discipline.

Social/political factors can strongly affect the process and outcome of applied deterrence. The best example is the Jamaican Gun legislation experiment (Gendreau & Surridge, 1978). The program got off to a dramatic start but soon the influence of civil rights lobbies, excessive media attention, political violence in key political ridings, and unforeseen economic problems made any long-term conclusions about the effectiveness of the legislation impossible. Important social/political **problems** are likely to be engendered by a deterrence program. Dramatic changes in the laws affect virtually everyone whereas treatment programs usually are localized and affect only selected samples.

Our review identified a variety of serious methodological shortcomings in deterrence research which severely limit the conclusions that can be made about the efficacy of a punishment model of crime control. Similar conclusions were reached by Zimring (1978) in his recent critical appraisal of a number of applied deterrence studies. The research problems in deterrence do not seem to be readily resolvable, unlike many of those which characterize the treatment research literature. Although a number of recent deterrence studies have been both comprehensive and sophisticated, deterrence researchers cannot yet make cause and effect statements. In contrast, there is an increasing number of treatment studies which can support cause and effect statements. Moreover, the difficulties involved in conducting experimental treatment programs (and the ethics) are far less onerous than is the case with deterrence. The cynic might argue that even if treatment prevails it is only by default. But it is not good enough to leave the argument at that. If one were forced to search a verdict at this point in

time we would, given the available evidence, rule in favour of treatment. But polarization must be forcefully resisted. Rather, treatment and deterrence have much more in common than those rushing to judgement on deterrence recognize. In the following sections we will attempt to demonstrate that useful programs in the debate will not come about unless there is a fundamental recognition of this fact.

V DIFFERENTIAL TREATMENT/DIFFERENTIAL DETERRENCE

It has been well established that in corrections there are no cure-alls. Programs that "work" with some offenders may fail or even have deleterious effects with other offenders. Treatment outcome seems to depend not only on the nature of the program but on the characteristics of the client and the therapists and the quality of their relationship. It also depends on the setting in which it is provided and the nature of the environment in which the offender is placed after treatment. It all seems to depend on who does what to whom, where, when, and how long. Surely this fact limits the value of treatment and forces the correctional pendulum in the direction of deterrence. It should not. Treatment has limited generalities. But so does punishment. We do not all respond to punishment in the same way or to the same degree. We cannot even be sure that what is perceived as punishment by some will be viewed as even mildly aversive by others. Nor for many clients can we be confident that punishment will reduce their proclivity to repeat the transgression which led to their punishment; for some, punishment can even increase the persistence of their anti-social behaviour (Ross & Doody, 1973). With correctional treatment there are no

cure-alls; with punishment there are no "deter-alls".

Indeed, the deterrence literature makes frequent reference to the potential of individual differences in response to sanctions in reflecting differences in attitudes toward risk, judgement of the severity and even the certainty of punishment (Becker, 1968; Ehrlich, 1973; Brown & Reynolds, 1973); differences in fear of punishment (Gibbs, 1975); and the fact of opportunity costs may vary from person to person (Grasmick & McLaughlin, 1978). Cohen (1978) has stated that the effects of incapacitation may vary if the offenders are from high or low crime rate areas. Monahan (1978) has argued that deterrent effects could well depend not only on the person or the situation, but on the interaction between the two - as is the case in other areas of corrections research (cf. Gendreau, et al, 1979). Other deterrence researchers have also drawn attention to individual differences in response to deterrence procedures (e.g., Bailey, 1976; Zimring, 1971) and even Wilks & Martinson (1976) have suggested that offenders should be categorized into degrees of "detrability".

Thus, it is ironic that Martinson should encourage the substitution of deterrence for treatment when he bewailed the fruitless search for "will-of-the-wisp groups" which might benefit from treatment programs. Consideration of individual differences is as essential in deterrence as it is in treatment. Our review suggests that, in this respect, there is an advantage in a treatment model because having been sensitized earlier to this issue, the treatment researchers have already identified many of the parameters for differential treatment (e.g., Andrews & Kiessling, 1980; Jessness, 1975; O'Donnell, et al., 1979). The deterrence researchers have hardly begun their work.

VI CONCEPTUAL VACUUMS

Having emphasized the existence of differential deterrence effects, we must draw attention to the fact that deterrence theory has often been viewed in isolation from other theoretical and applied issues in corrections (cf. Grasmick & Milligan, 1978). Moreover, too often researchers and theoreticians have been blinded from reality (or have actually distorted reality) as a result of their strict adherence to the orientation of a particular discipline - economics, sociology, or psychology.

It is our view that treatment did not really come of age until practitioners cast aside the medical model and began attending not only to personality factors, but also to cognitive, environmental, sociological and economic factors. For example, our review of the correctional treatment literature identified no effective program which was based on a medical (disease) model of criminal behaviour (cf. Gendreau & Ross, 1979; Ross, Currier & Krug-McKay, 1980). Effective programs provided a multi-faceted approach which did justice to the complexity of the offenders' problems and the probable causes of their illegal behaviour.

Deterrence procedures, we suggest, have not yet "come of age". Too often they are based on oversimplistic and narrow conceptualization of the causes of crime and of the offender's response to impending punishment. It is folly, for example, to rely on an economic theory of deterrence when trying to predict the behaviour of individual offenders. As we have argued in the preceeding section, the effects of deterrence are complex.⁷ Attention must be paid to both situational and psychological factors. In support of this view, Erickson, Gibbs & Jensen (1977) have argued that deterrence theory is,

in fact, a psychological theory. If they are correct, and we think the following facts support them, then the ultimate irony will have been visited upon those who have abandoned treatment for a new correctional Nirvana. As deterrence theory comes of age it will face the identical psychological conceptual and methodological problems that treatment researchers faced. Psychological components are inescapable, for, in assessing the probable effects of any deterrence procedure, an estimation of the individual's perception of the likelihood of punishment and its severity, and his fear of the punishment entailed will be required (Gibbs, 1975; Geerken & Gove, 1975; Henshel & Silverman, 1975). It also requires assessment of the extent to which information about punishment and the probability of its occurrence is available to those whom it is desired to impact (Erickson & Gibbs, 1976; Parker & Grasmick, 1979). Furthermore, there are critical levels of perception - below a certain perceptual threshold the possibility of apprehension may not effectively deter the potential offender (Tittle & Rowe, 1974).

Managers of deterrence programs will have to take into consideration that some individuals e.g., psychopaths, may not be at all deterred by punishment (Hetherington & Klinger, 1964; Lykken, 1957). It may be that those whom we most desire to deter are the least likely to respond to the punishment we promise to impose because of differences in motivation to respond to aversive consequences (Gendreau & Suboski, 1971). For example, Claster (1967) reported that delinquents more than non-delinquents felt that they were unlikely to be arrested if committing a crime. Teevan's (1976) offender subjects felt it is unlikely someone like themselves would be caught. Erickson's (1978) samples frankly admit to "nothing to

worry about" re: severity of legal sanctions. Lotts, et al., (1978) found that offenders gave higher estimates of the likelihood of offenses culminating in arrest and conviction but were more likely than non-offenders to say they would commit such offenses in future. Erickson (1976) reported that drug users given the most severe sentences self-reported a greater intent to use drugs in the future. Additionally, 77% of her subjects who perceived a high certainty of being convicted and sentenced said they would violate the law again.

Deterrence theory also may not apply to crimes of passion or crimes where a person is intoxicated. In fact, such crimes rather than rational crimes are in the majority. Chambliss (1966) has suggested that high commitment and expressive crimes do not respond to deterrence; only low commitment and instrumental crimes do.

Deterrence advocates must also contend with the results of research on the psychology of decision making (e.g., Slovik, et al., 1977; Payne, 1973). The econometric model of deterrence assumes that the commission of most crimes is a rational act - the individual decides to commit a crime on the basis of his assessment of the probable utility of the act which he arrives at through a multiplicative weighing of the forthcoming gains and losses (cf. Palmer, 1977). Decision theory also assumes that individuals decide to act in certain ways based on their assessment of alternatives but it takes into consideration that some subjects use some dimensions more than others in their decision making (Slovik & Lichtenstein, 1978).

In contrast to the econometric model, Carroll's (1978) research has suggested that for many individuals the decision to commit a crime is not based on a careful weighing of the credits and debits which

would ensue, but on a very simple and possibly unidimensional analysis of the opportunity to commit the crime.⁸ Moreover, he found that subjects differ substantially in individual preferences; some are motivated by money, some by risk. Previous history and intentional states are also very important. The nature of the situations may also play a part in the decision making. Carroll (1978) also found that the possible rewards of crime were twice as powerful as penalties in predicting crime judgements, and the probability of success was considered to be twice as powerful in their decision to commit a crime as the probability of capture.

Future deterrence research will also have to incorporate a social psychological perspective. As Erickson, et al, (1977) cogently point out, deterrence supporters must show that the relation between properties of legal punishment and crime rate holds independently of the social condemnation of crime. Until they do so the deterrence hypothesis will be suspect as Erickson, et al, contested that low crime rates and high perceived certainty of punishment may reflect extra-legal social values. To further support their contention, Erickson & Gibbs (1978) reported that upon controlling for the social condemnation of crime no significant relation between the perceived certainty of punishment and the crime rate was evident. Then in a subsequent study Erickson & Gibbs (1979) reported that the rate of deviant behaviour was a direct function of community tolerance of deviance. Related to this fact, Gibbs (1975) and Zimring & Hawkins (1973) have stressed the importance of the subjects normative and interactional environments i.e., stigmatization. Support for this notion comes from Waldo & Chiricos (1972). They found that 91% of the subjects who said they would not steal, still would not do so

if laws regarding theft were reduced - it appears that it is a moral rule rather than a legal one that is effective. Secondly, there is some evidence that indicates that possibly the law does not affect moral judgements (Walker & Argyll, 1964).

These kinds of data beg the question as to how pro-social views that lead to a social condemnation of crime are learned. The only theories of crime that provide any leads in this regard come from a social-control perspective, in particular, social learning and modeling theories (cf. Nettler, 1978; Neitzel, 1979; Trasler, 1978). And some of the empirical studies that have produced some of the most potent effects have been grounded in various social learning models of behaviour (e.g., Alexander & Parsons, 1973; Chandler, 1973; Fo & O'Donnell, 1974; Mills & Walters, 1979; Sarason & Ganzer, 1973).

VIII DETERRENCE/PUNISHMENT

Those who sing the praises of deterrence seem to be blissfully unaware of a large body of research on their favourite subject - punishment.⁹ Perhaps this research has been missed (or rejected) by the purveyors of the deterrence doctrine because it has not been conducted by sociologists or economists but by psychologists. Ironically, with the exception of Gibbs (1975), who has called for a more careful examination of the punishment literature vis-a-vis the deterrence hypothesis, psychological research on punishment has been dismissed as of little consequence.

If deterrence proponents are to promote their views in the future with any sense of reality then the punishment literature has

to be seriously addressed. To do so, however, will be a sobering experience and will give testimony to the enormous complexity of the effects of punishment. Even with well controlled laboratory studies social science has failed to yield firm conclusions about the effects of punishment even with animal subjects. Until there is a well developed literature in these areas then any pronouncements, particularly of a social policy nature, about deterring humans' anti-social behaviour in society at large can only be viewed with incredulity. To do justice to the facts a thorough reading by deterrence proponents of at the very least, summaries of punishment research (e.g., Johnston, 1972; Walters & Grusec, 1977) is in order.

The one fact on which there is total agreement among those who have conducted research on punishment is that the effects of punishment can be exceedingly intricate. Even with infra-human subjects the effects of punishment depend on a host of factors - the intensity of punishment, its duration, its magnitude, its contingency to the behaviour being punished, the immediacy and consistency of the behaviour/punishment pairing. With humans these factors appear to operate in an even more complicated fashion (e.g., Cheyne & Walters, 1969; Freedman, 1965).

Compounding this lack of knowledge of punishment effects on humans has been the fact that there have been very few studies of animal analogues of socialization practices (Walters & Grusec, 1977). In addition the animal researchers have focussed on only one kind of learning - that of operant conditioning. Thus, much of this knowledge may be paradigm bound. Second, the research has focussed on very few species and has studied the maintenance of behaviour rather than its acquisition. Third, existing research has focussed on only one

punisher, electric shock, used repeatedly. Much of the human research has been with children where less powerful and **precise** punishers (e.g., noise) have been used. Fourth, in experimental animal situations the behaviour under study is often developed under artificial conditions where history is deliberately made of little interest or importance, quite unlike human social situations, where behaviour is shaped by already existing behaviour patterns and situations (cf. Morse & Kelleher, 1977). Obviously, with humans, the history of the organism is important and has powerful effects on the perception of punishment and, therefore, its effects (e.g., Sears, et al., 1957).

Motivational and other individual differences are important components of human reactions to punishment. For example, children are more likely to comply with a request from a rewarding person than a punitive one and this effect is additionally related to individual differences such as anxiety-level (Carlsmith, et al., 1974), sex, and age (Lavoie, 1973, 1974). Complex person to person interactions may also be involved, but, there are very few studies on the relationship between the punishing agent and the recipient. How various individuals internalize punishment and learn as a result of it has yet to be studied (Walters & Grusec, 1977).

Punishment may also exacerbate rather than inhibit the behaviour it is intended to suppress. There are a considerable number of studies that indicate that aggression can be imitated (e.g., Bandura & Huston, 1961) but the data are still equivocal as to how (or whether) punishment may lead to aggressive behaviour or produce emotional disturbances (Dollard, et al., 1939, Bandura & Walters, 1963; Wagner, 1966; Maier, 1949; Karsh, 1970; Solomon, 1964). It has been

clearly demonstrated that intermittent and/or inconsistent punishment, which is precisely the kind of punishment our criminal justice system provides at times, may actually increase the persistence of punished behaviour (Ross & Doody, 1973; Ross, 1980). Finally, Azrin, et al (1965) have argued that the tendency of the organism to escape from a situation involving punishment and not any inherent effectiveness of punishment may constitute one of the major disadvantages in the use of punishment for the practical control of behaviour.

In reviewing the deterrence literature we were also puzzled by the lack of sensitivity of the researchers to definitional issues. Indeed, a more basic question could not be overlooked. The question as to what events actually constitute punishment has plagued researchers for decades - they have been unable to decide upon an exact definition of punishment (Campbell & Church, 1969). For example should punishment be defined as an aversive stimulus (procedure) or defined (functionally) as a behavioural outcome? There certainly is little agreement as to the explanation of punishment. Three conflicting theories are currently prominent - the competing response theories (Dinsmoor, 1954; Mowrer, 1961; Rescorla & Solomon, 1967); the negative law of effect theories (Fantino, 1973; McIntosh, 1974; Rachlin & Herrnstein, 1969; and motivational theory (Estes, 1969). As Bolles (1975, p. 393) stated:

"We still do not know whether Thorndike was correct 60 years ago when he said that punishment weakened a stimulus-response connection or whether he was correct 20 years later when he said that punishment does not weaken such connections but only has indirect effects of behaviour"

If the preceding facts on the experimental study of punishment do not provide a sobering antidote for a rush to apply deterrence the literature on the application of punishment to human problem behaviours will. On one hand, it can be stated that punishment "sometimes works for some problems" (Harris & Ersher-Hershfield, 1978). Various methods of punishment e.g., electric shock, over correction, time out and extinction procedures, have been effective with alcoholics (Davidson II, 1974; Hedberg & Campbell III; Vogler et al., 1975), smokers (e.g., Bernstein, 1969; Hunt & Bessalic, 1974) and disturbed behaviours in children, adults, and retardates (cf. Harris & Ersher-Hershfield, 1978). On the other hand, the severest punishments e.g., electric shock, have not proven to be the most effective and the more adequate methodological studies have focussed on less severe forms of punishment. In addition, one can reasonably conclude that any generalizations based on this body of literature must await substantially more research. Many of the applied studies have suffered from serious methodological problems (Harris & Ersher-Hershfield, 1978; Johnston, 1972) that at least equal, if not surpass those reported in the corrections treatment literature. Some of the problems have been: important variables left uncontrolled, few attempts at replication, unwarranted conclusions because of methodological limitations, poor response definition, unreliable recording techniques, lack of follow-up, problems of generalization and maintenance of response suppression, potential side-effects, method of delivery, failure to consider who benefits from the procedure and not the least, the ethics of the procedures employed.

VII CONCLUSIONS

Our review of the treatment literature per se attempted to demonstrate that corrections, in its vain search for panaceas has

all too often adopted remedies - such as deterrence - more on promise than evidence and has implemented them with callous indifference to quality control. When the treatment literature failed to live up to unrealistic promises it was categorically rejected with a cavalier disregard for the fact that in some important instances it served its purpose well. The fact that some of the successful intervention programs documented in the past have not been adopted and routinely implemented in well structured and comprehensive ways by social service agencies is not a condemnation of the treatment literature per se. Rather, it is a condemnation of the fact that we are far from being the experimenting society (cf. Campbell, 1965) we pretentiously claim to be. But, that is another issue entirely that deserves more attention from criminal justice researchers interested in the issue of service delivery to offenders.

Hopefully, vociferous deterrence proponents, enamoured with the hope that punishment will deter crime, will be willing and able to do what is necessary to ensure that the implementation of deterrence, in practice, is consistent, potent, and economical. In our most cynical moments it is our conviction that the usual panacea scenario will come to pass - deterrence too will be discarded and correctional workers once more will be disillusioned and lapse into a conceptual vacuum until the next fad comes along and in turn will be too eagerly embraced.

A less likely scenario, but one that could fortuitously occur, is that this review, as well as others in the criminal justice literature, will stimulate the establishment of an empirical base for the study of some of the issues that must be dealt with. Given

the fact that the North American criminal justice system still lurches in conservative and liberal directions at the same time (Erickson, 1978) both treatment and punishment approaches will continue. Certainly the evidence we have reviewed would argue for a vigorous continuance of treatment research along the lines of some of the current studies attesting to fruitful intervention, in particular with young offenders in community settings and diversion related programs and probation and parole. More studies need to be produced in this area-building on what we think is already a meaningful data base - but attention must be paid to how best to implement such programs into the mainstream of social service delivery (cf. Andrews & Gendreau, 1979) once they have been shown to be effective in demonstration projects.

The task facing deterrence proponents is a far larger one in many respects. We see, frankly, little to be gained in carrying out the traditional post-hoc studies that have characterized the deterrence literature to date. Further research in this vein leads only to methodological blind alleys. This does not mean there should be a halt to or reluctance to continue deterrence research as some ¹⁰ have concluded from the panels report on deterrence (Blumstein, et al, 1978). Rather, the Hart (1978) and Schnelle et al (1979) studies are exemplary in regard to ingenious attempts to provide answers as to the effectiveness of deterrence. We also need more elaborate field studies carried out with integrity and experimental rigor on specific deterrence (cf. Gibbs, 1975). Possibly, experimental analogues to deterrence in society at large may be able to be done within penal systems. In such systems fairly substantial controls

may be had over a variety of extraneous variables. There is also a need to provide single-subject studies of the effects of deterrence (cf. Bailey & Smith, 1972). While not cause and effect studies per se this approach can yield strong conclusions on the effect of a deterrence technique over a long period of time.

At a conceptual level it is hoped that this review has stimulated the notion that deterrence proponents need to become intimately aware of the methodological problems that treatment researchers have faced (and to some extent successfully dealt with) in the past. They will soon realize that they must deal with similar problems and issues when, and if, applied deterrence comes about. From a theoretical standpoint deterrence researchers must realize that there is a strong psychological component to deterrence (e.g., Erickson, et al, 1977) and there must be an integration of psychological theory and variables (e.g., Carroll, 1978) in deterrence research. Moreover, an awareness of the experimental infra-human and human psychological research on punishment is warranted so as to provide a foundation of knowledge from which to argue for applied deterrence with some degree of reality.

If a substantial and beneficial marriage between the treatment and deterrence literatures occurs, we should witness potent interaction studies combining efficacious treatment and deterrence paradigms for the prevention of criminal behaviour.

There are some examples of tentative steps in this direction (e.g., Doctor & Palakow, 1973; Hayes, 1973; Walter & Mills, 1979). Of course, the speed with which developments occur in deterrence will rest in part on the resolution of the complex ethics of deterrence research, an area which, in our view, has been substantially neglected. Successful resolutions in this area remain highly problematic not only because of this fact, but the fact that substantial progress in knowledge on the effectiveness of deterrence in the criminal justice system will in part await research developments in the experimental study of punishment with infra-humans and humans. This literature has been relatively slow in its development¹¹ and easy solutions and leads for new directions in applied punishment of human behaviours will not be readily forthcoming.

Thus, we make a final plea for an end to panaceas. Presently, treatment of offenders has much to recommend it in terms of efficacy, methodological rigor, theory development and cost effectiveness. Deterrence, may have, even can have, but that cannot be determined until those rushing to apply deterrence undertake some of the much needed theoretical and empirical work that obviously begs to be answered.

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FOOTNOTES

1. The opinions expressed in this paper are solely those of the authors. Paul Gendreau is Regional Co-ordinating Psychologist (East), Rideau C.C., Box 100, Burritt's Rapids, Ontario and also Adjunct Professor, Department of Psychology, University of Ottawa, Ottawa, Ont. Bob Ross is Professor, Department of Criminology, University of Ottawa. Reprint requests should be addressed to the first author.
2. The Wilks & Martinson (1976) paper is particularly revealing in that while they placed a "pox" on prison use and mandatory sentencing, the "restraint" program they proposed would have necessarily increased prison use. Second, despite their aversion to examining individual differences (cf. Martinson, 1976) their program's success rested in part on determining who would be effectively deterred. Finally, their program would have pleased the radical criminologists, since those doing the "restraining" would be some of the oppressed minorities themselves - women, representatives of high unemployment groups, unemployed teenagers and ex-offenders.
3. The two National Research Council reports (Blumstein, Cohen & Nagin, 1978; Sechrest, White & Brown, 1979) provide an operational distinction between treatment & deterrence literatures. For our purposes the treatment literature consists of counselling, behaviour modification and work related programs in institutions and community. The deterrence literature refers to procedures which state that

the threat/imposition of legal sanctions e.g., probability of apprehension, imprisonment and severity of punishment or length of incapacitation will deter criminal behaviour.

4. In fact, shock probation is not really punishment or deterrence but a compromise between punishment and leniency (Scott, Dinitz & Shichor, 1978).
5. This argument has been primarily directed towards Murray & Cox Jr. (1979 a) who have reported 50-70% decreased crime rates among chronic offenders for certain types of treatment programs. See Murray & Cox Jr. (1979 b) for a spirited argument against the regression critique.
6. Gibbs (1979) pointedly stated "one of the crowning absurdities of methodology of the social sciences is the claim that path analysis and so-called causal models provide a basis for causal inference when applied to data on the synchronic association between variables". Tittle (1978) stated that issues pertaining to causation are ignored "as if Hume never existed".
7. To illustrate this point Gibbs (1975) has stated that there are 9 ways legal punishments could prevent crimes other than through deterrence. Palmer (1977) noted that economic theory does not even necessarily say that an increase in certainty and severity of punishment is the socially optimal means of reducing crime, or that the threat of punishment deters anyone, or that punishment is more effective if it is uniformly imposed. Indeed,

some critics of deterrence have questioned several of the vague premises of the theory (cf. Beyleveld, 1979; Gibbs, 1975).

8. Carroll's research is a good example illustrating a major failure of the economists' approach to human behaviour. According to Martinson (1976) economists equate human decision making with "the purchase of a can of beans".
9. The language is different but the operational definitions are similar. Deterrence proponents talk about the suppression of anti-social behaviour as a consequence of legal sanctions. For punishment researchers a punishing stimulus "is a consequence of behaviour that reduces the future probability of that behaviour" and "punishment is a reduction of the future probability of a specific response as a result of the immediate delivery of a stimulus for the response" (Azrin & Holtz, 1966).
10. We disassociate ourselves from Ehrlich & Marks (1977) view that the academic freedom of deterrence researchers is threatened by recommendations of the panel on deterrence (Blumstein, et al, 1978).
11. Rather, psychologists have studied punishment sporadically. Given the importance of the topic there is really a scant literature on the topic (see Solomon, 1964; Walters & Grusec, 1977 for explanations of this fact).

END