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BEYOND SALIENT FACTORS—AN APPLICATION OF AN INDUSTRIAL TECHNIQUE TO PAROLE PREDICTION

by

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This morning I would like to discuss with you some of the techniques that we are trying to apply to a problem in parole—specifically parole prediction. The task that I have taken this morning is to try to demonstrate not results of a prediction study, (there have been many prediction studies) but to try to talk to you about the techniques that can be used and how we, with a great deal of past experience working in industrial selection problems, can bring some of that knowledge and technique to bear on the decision process in parole.

I have spent the last seven years of my life working with the problem of selecting employees in industry, and that problem has a great deal in common with making decisions about parolees. The point of my presentation is to show you how the lessons that have been learned, not just by us but by others, in the use of psychological tools and selection of employees can be brought to bear on the decision process at the parole board level.

There are quite a few parallels. The problem in both cases is that of making a decision about an individual and the decision involves giving the individual an opportunity to do something. In industry it is an opportunity to work. In parole process it is the opportunity to leave the prison environment and go into a supervised environment outside of prison. Many of the same philosophical questions, such as the equity/fairness question, exist both in industry and parole. The questions are very intense in this area in both of these arenas. We have quite a bit of legal and philosophical discussion about equity in the selection of individuals for jobs—just as much as you have in the decision to grant or not to grant parole.

We have the same clash between two general schools of thought. One holds that decisions need to be made out of the heads of individuals, by gut feelings and by psychologically touching the person you are dealing with. Another extreme view holds that you need to use only objective measures and numbers; things on paper. Both of these views are represented in parole and industry.

There are also some of the same policy problems. For instance, we have pressures in industry which suggest that the best way to select people is not to select at all, but to hire people for the job in a turnstile manner. Let them come into the job and let the job do the selection for you. On the other extreme in industry is the view that you

need to select extremely carefully and recruit a lot of people, taking only the very best in terms of whatever your selection process is.

In parole we see differing schools. Some people don't even want parole. We're seeing at the federal level, through public media, discussions of doing away with parole and having everyone serve finite sentences with no supervision. At the other extreme we have people talking about mandatory supervision for all releases from the prison environment—whether by long parole or brief parole. So we have very similar types of policy problems, we have very similar type of philosophical worries, we have a very similar task; it is a decision-making task about individuals.

Both environments are going to have mistakes. We make mistakes in the selection of individuals for jobs. That's always happened; it is always going to happen. We make mistakes in granting parole; it is always going to happen. The problem that faces us is trying to minimize those mistakes—trying to deal with the decision process as accurately and equitably as we can. When we make a mistake we know that it cost in terms of unhappiness, money, and failure. Remember there are always two failures when you make a mistake—failure of the person who did or did not get the opportunity, and the failure of the person who made the decision.

Parole, of course, has the problem of potential harm to a broader segment of society by making a mistake. We may think that that makes parole extra sensitive, but let us think a moment about the industrial setting. A mistake in hiring a nuclear engineer, an airplane pilot, or in selecting a person to operate some of our complex technology has the potential of harming a large number of people also. These two arenas have so much in common that it seems reasonable to think that techniques which work in one arena should at least be tried in the other. That's what we are about today.

In industry the task is to try to choose a person who will be successful on the job; in parole the task is to try to choose people who will be successful on parole—and I have just said the most critical word for both of us—"success." What is success? This is one of the things that we have really learned in years of selecting people for industry. As you try to make selections you try to pick

people who match successful people and to screen out people who match unsuccessful people. Still, the definition of success is very difficult. For instance, what is success on a job? Success could be counted as staying on a job—tenure, persistence. In many environments that may be the prime measure of success. It could be attendance in those job environments that have excessively high absenteeism rates. It could be ability to do the job. Notice that I didn't put that up front because there are many jobs where that is not the prime consideration. It could be **willingness** to do the job, as opposed to **ability** to do the job. It could be adaptation to the environment or the ability and desire to work with the other people. There are many other possible measures of success in a job environment.

In parole we have just as complex a situation. Here, success could easily be a mere technical definition. Do the parolees complete a parole or not? Is parole revoked or is parole discharged? That is one measure and it is a frequently used measure of success in parole studies, but that encompasses a great many things because one can fail or succeed for different reasons. It could be that you want to say that success occurs only if the parolee and society benefits from the parole. It could be that the parolee is successful if he does not become involved in a violent act while on parole. It could be that it is considered successful if, and only if, a person maintains gainful employment while on parole. That is the critical thing that we are going to deal with. What do you define as success?

The technique that we use is to match successful persons and unsuccessful persons in the decision process through some systematic procedure. This has been the process that has been used for many years with parole. You use different techniques to make that match. You have situations where you make that match through use of your clinical judgment. Board members, through their many years of experience in dealing with offenders, interview, read records, and develop a clinical opinion of the potential for success or failure. That's the way that industry has been used for many years in selecting employees. An employment officer interviews, reads the records, looks at resumes, and develops a clinical judgement of the potential for success. I am not here to tell you that that is a bad way. It is, however, a way that is frequently idiosyncratic, where you don't get a great deal of agreement between persons. It is also a way that is coming under increasing attack as to its equity or fairness.

Another way you may make those decisions is to look at the experience tables in a situation where you have looked at statistically a large number of parolees. It may be found that persons who have a past history of drug involvement are less likely to complete parole successfully. It may be that people who have been involved in the use of stolen automobiles in the commission of a crime may be less likely to complete parole, and so on. Those are experience tables. We have learned these facts over the years from experience with thousands of parolees by

gathering histories and by statistically relating items of their history to success and failure. We have profiles, if you will, from these experience tables. Some are used in scored form. That is, if a person has one of the negative characteristics you knock a point off; if they have a positive characteristic you add a point, and get an overall score which gives you some guidance, some estimate to the probability that this individual will or will not complete parole.

Another way is to enhance that particular approach with some powerful techniques like regression form techniques. Here you construct your scale using linear weighted models. It is an elaborate statistical procedure used quite a bit in industry. It is used quite a bit in research, and it is being used more and more in the criminal justice field. I am not going to tell you what regression analysis is because sometimes I wonder what it is myself, but it is a good technique that is being used to develop many variable relations at once, to success on the job or parole. It is a multivariable statistical procedure.

We have seen some uses of experience table procedures to structure the parole decision process, up to and including the federal experience with the so-called "salient factors" approach. This is an approach which uses the basic experience table in which they have identified, through research, a series of history variables about the person. These include criminal history, potential familial arrangements upon leaving prison, and other items, to develop a prognosis of success. That scale score is then matched against a severity code which gives you a range of potential months of incarceration that would be considered fair or equitable. In the federal system we see the use of this, with discretion, quite a bit.

We are trying to work in that same arena. That is, we are going to use statistical procedures to develop an understanding of potential parole success. Here is how we are going to do it. The first thing is to recognize the problem as being no different from the problem in industry. We are going to approach it the same way. When we approach the problem in industry we take a very systematic approach. The first thing we do when we are asked to develop a selection, predictive, decision-making procedure, is to look at the problem itself. We analyze the needs of the group that come to us with the question. We have done that in Texas with the Texas Board of Pardon and Paroles, and we have worked with the Board on trying to define what they need to deal with the problem of decision making. Do they really have a problem?

It was determined from the discussions with the Board and their staff that the Board wished to have systematic procedures in making decisions about parole. It is a very general or global type of need which would not be different from an employer coming to us saying, "We want to have some help in systematizing our hiring process." The next step was to analyze the problem and see what success and failure is going to be. Remember, as we get into exactly how we are going to do this, we are trying to pick

people who are going to be like successes, and screen out people who are going to be like failures. Therefore, after we know that there is a problem, and after we understand the desires and needs of the agencies we are dealing with, the most important thing we can do is define success and failure of the individual in the environment.

It may seem obvious that success on parole—is whether a person completes parole or is revoked. When, any time someone in industry comes to me with a simplistic definition of success, I know that I am going to have a lot of trouble dealing with the problems, because as soon as we get to matching people to those who stay and screening out people like those who leave, we immediately find that is not the real problem. Very frequently we get people who stay, but won't work. The problem is almost always one of many different kinds of success. Many times the factors in success are contrary to one another—that is, they correlate negatively. I have just completed work in a situation where productivity, a measure of success, was negatively related to absenteeism. That means that people who are productive are people who are not there as often. If your productive people are not there, you are not getting production, and that means that you are not getting successful people.

Even more dramatically in that situation, the absenteeism was negatively related to the tenure or persistence measure, meaning the longer people stayed with you, the more absent they became. If we had taken a simple definition of success to be persistence or tenure, we would have ended up selecting people for the job who remained in their jobs but were not on the job every day.

In parole you have exactly the same situation. A global definition of success isn't going to wash. Any studies that use a global definition of success with parole will pick persons who are successful one way and failing in several other ways. That is one of the foremost lessons that we bring to this environment from industry. If we take a simplistic definition, we get a simplistic result. If we take such a simplistic definition in parole, we will receive exactly the same negative results.

What then do we define as success in parole? We don't define it; the practitioners define it. We went to the people in the field, to the Board, its staff and the field officers. We discussed with them the things that cause the most difficulty for parolees. What is it that tells you that a parolee may or may not be succeeding? One of the first things we got was the global definition: "I don't have any problems with them and they complete parole. They are administrative successes. They obey the rules of parole; I can always find them; I can get my monthly checks; they don't get into enough trouble that I have to get a warrant for revocation. So we had to admit that, in fact, a component of success is administrative success—the ability to adapt to the rules of the Parole Board, to the conditions of parole, and to complete parole under those rules and conditions. It is an important measure. It is just not the only measure.

Another measure of success is whether or not the person becomes a violent or becomes involved in violent crime while on parole. This is an emotional area and a problem area. We chose this as another measure of success. A person will be considered successful if they do not engage in acts of violence while on parole. Now we have two measures of success.

Another measure of success is whether a person engages in criminal activity while on parole. Please note that we have two definitions which seem to be redundant. I have said that they would complete parole (an administrative success), and they will not recidivate. We do not consider these redundant because we know that the parole officer has latitude and that there are instances for potential criminal behavior that are not adjudicable. They are not acts that can be proven, they are not acts that demonstrate enough evidence to result in revocation or re-arrest and conviction. But the parole officer in his or her careful judgment, can tell us that criminal activity is probably occurring though there is not enough proof. So these two definitions are non redundant; they are two separate definitions.

We have these definitions, two somewhat global definitions. One has to do with the parolee's adjustment to work. It has been said many times that one of the prime factors in a parolee's success is his having a steady job. So we are going to choose as a fourth measure of success, adaptation to the world of work—consistent employment record. Failure to maintain gainful employment is a measure of failure.

The last measure, the fifth measure, has to do with the parolee's adaptation to family and society. The people we are working with as parolees are persons who have had some clash with society or they wouldn't be in their situation. We can see those clash as the parole officer supervises the parolee. They occur within the family and with friends and employers. We are going to measure those clashes and also define success as completing parole without undue evidence of social adaptation problems. After all, a person can be paroled, stay out of crime, not be violent, and have constant emotional conflict which cripples adaptation to work. This causes conflict with the parole officer and could lead to crime. Those are the five definitions of success.

We have learned from industry that there are ways of combining these types of multiple criteria, either before you begin research or after you have completed multiple predictors, to provide you with consistent guidelines for decision making.

Now that we know what the problem is, what the need is, and what we are going to call success, let me tell you how we are going to develop a predictor. A predictor, after all, is simply a statement of chance or probability, and it is a statistical entity. We are going to use statistical procedures to try to predict these criteria that I have just defined for you. In order to develop a statistical relationship you need to have something to measure, (called

criteria). I have just defined five criteria, and some measures of behavior from which we are going to make our prediction, called predictor variables. We may do this one variable at a time (univariate prediction) using correlation techniques, bivariate correlation techniques, or we may do this by grouping a large number of predictor variables and relating them to one or several criteria at once. These are multivariate correlational techniques. The most common such technique is multivariate regression analysis. This is the most common we use, though we do use varieties of this technique in certain situations.

When you apply a multivariate regression analysis, your task is straight forward. Measure behavior called criteria, (in our case they are violence, social adaptability, job adaptability, recidivism, and administrative success). We are also going to measure personality, history, and demographic variables, and develop a straight line equation which relates these two sets of variables and allows you to say, "If I find this personality, this history, and demographic variables, I can expect this chance of success on parole." Very simply put, that is exactly what we are doing. It is just like a physician or nutritionist working with a prediction of weight and saying if a person is so many years old and is so tall and has a certain bone structure, then I can expect the weight to be "x". That is exactly what we are going to do. We are going to do that from a base of predictive variables not too unlike the predictive variables that we have seen used in other studies. The most common set of predictive variables for parole decision-making has been a set of history variables which measure criminal acts, activity in prison, educational history, current social situation, and in some situations, the expected social situation in terms of living with a family or not. From that knowledge we will predict the potential for success.

In some recent studies, we have seen systematic psychological measures, personality measures, being brought to bear. Of course you are familiar with the many studies using the MMPI in one way or another. Other measures have been used including the California Personality Inventory. We are going to sample the psychological domain with a paper and pencil instrument also. We are going to use a method which is a combination instrument. It measures personality, (we call it self-perception) and social perception as well, (that is what does the person think other people are like). It also measures interest patterns. We are going to use these three variables: social perception, self perception, and interest, in conjunction with variables from the history and socioeconomic domains.

When doing a study like this you can go two ways; you can do a cross-sectional study in which you gather information from a static group—a group you know something about and on whom you have gathered all your information. You can develop predictors from that static group. That is called cross-sectional study.

Another method is to measure today, (especially your

predictor measures), and follow that group for some period of time observing their behavior. Do they become violent? Do they complete parole? Do they keep their jobs? Do they have problems in society? And at the end of that time you can develop your predictors. This is called longitudinal study. Both methods have strengths and weaknesses. The longitudinal study takes a great deal of time. Also, you have a problem of rare events because, though it is a problem, it is not a problem in large numbers of cases. Longitudinal studies therefore, can run into a statistical nightmare in trying to develop relationships between a large pool or predictor variables and a criterion in which the number of events is very small relative to the number of positive events. This leads to difficulty in achieving over-all accuracy and frequently results in too high a false positive rate with your predictor. That is, your final predictor score says too many people are going to be violent.

A cross-sectional study does avoid this problem by giving you the opportunity to increase the size of the negative criterion group, and balance it more with the positive criterion group, giving you a fairer chance, statistically, of estimating the negative and positive predictions. Cross-sectional studies have one big problem and that is that you may mislead your self. Having made your measures at one point in time, in one environment, you may be measuring things that are very specific to that time frame or environment. Longitudinal studies help you get around that. We are combining the two techniques. We have approximately 3,000 inmates for a cross-sectional study. On various sub-sets of that group we have measures of some of the criteria for success on parole, such as acts of violence, number of repeated crimes and convictions, parole revocations. We have completed collecting a 1,500 man longitudinal sample—a sample of individuals who were being released on parole on standard parole procedures during the 1976 time frame. We have been following those individuals monthly by surveying their parole officers and asking them to complete a very rigorously defined set of behavioral items. Does the probationer have a job? Does the probationer have financial problems? Has he or she committed a crime or been involved in drug abuse or violent acts? Those are the criteria of measure for the follow-up group.

In our cross-sectional work, then, we will develop initial predictors of several of the criteria: notable violence, recidivism, and administrative success. These predictors will be developed by splitting our samples into two groups, developing the predictors from one group by statistically developing the relationships between the predictor and the criteria and then checking that relationship against the other group which has not been used in the development. This is a cross-validation procedure. That cross checking gives us some assurance that the relationship we have discovered in the first group, say Group A, is reliable and stable in terms of differences between people and that we have not sampled something

that is peculiar to just one group of individuals. However, it does not give us full assurance that we have not sampled something peculiar to the time and environment from which the cross-sectional group came. Thus, we will have a second cross validation; the longitudinal sample.

Other measures cannot be approached from the cross-sectional study, notably social adaptability and work adaptability. We have, however, approximately 80,000 individuals from industrial environments on whom we have extensive data. We are going to bring those data to bear on the two issues to augment the longitudinal study, giving us the final definition of the predictors from that arena.

To date, we have been able to get initial data completed on one of the cross-sectionally studied criteria. I will tell you briefly what that is and then I am going to try to describe to you how these techniques may be used. We have worked with the problem of violence over many years. Back in the late 60's there began an attempt to develop statistical predictors of potential for repeated violence among offenders by using psychological measures of the predictor variable and carefully scaled examinations of actual violent behavior as criteria. Those early attempts were sound enough to give us some feeling that a reliable and valid predictor of violence-prone offenders could be developed. Thus, we have tried again with larger samples through the cooperation of the Texas Department of Corrections to obtain very careful ratings of actual violent behavior; not potential for violence, not judged violence, but violence we could define clearly as incidence of violence by one person or another—murder, assault, or a variety of other such activities. A panel judged the records to assure that this was the case for each individual. It scaled down from multiple violence through a single violent act to threatened violence, all the way to no actual violence, (such as where a person exhibited a weapon but did not use it). At the bottom of the scale was a group for whom we had no history of violent acts in a prison or out. We ended up with a very clear 5.0 scale. A great deal of care was given to judging behavior to insure that we had accurately placed people in the five categories. We analyzed the scale and found it seemed to be a progressive or linear scale—that is, persons who had two acts of violence in their history seemed to be more violent than persons who had threatened violence and even more violent than people who had no history of violence.

We always find problems with measures of criteria. Ours, in this case, was that those who had no history of violence also had fewer offenses and were younger, thus they had not had the same exposure to potential violence as people who had committed multiple acts. To correct this, we had to exclude some individuals from the study to balance the scale points for this opportunity for violence. When we excluded from the study individuals who had not exhibited any violence, but who were also young, first offenders, and dealt with a more homogeneous age group,

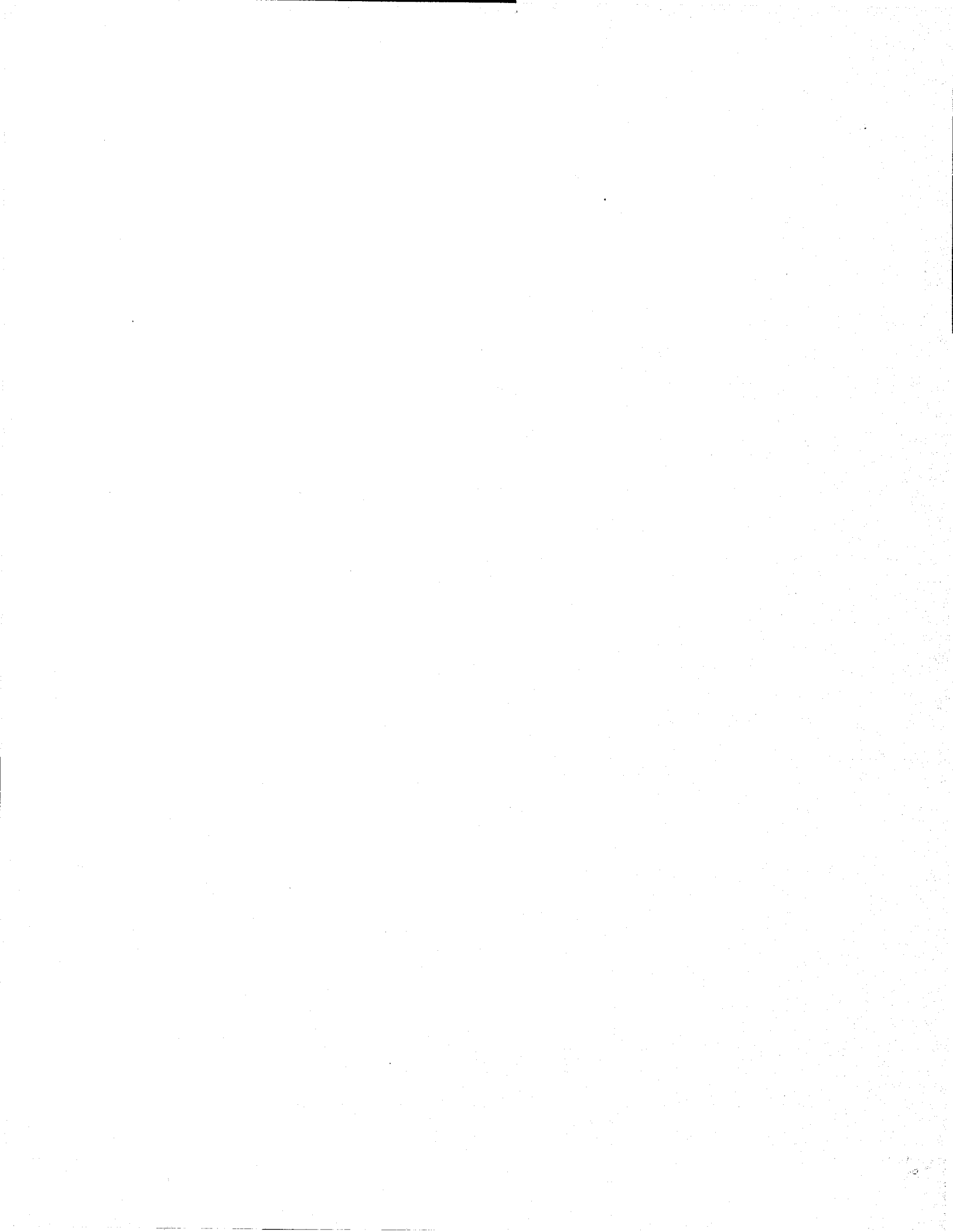
we were able to develop a statistical relationship between our predictable variables and the criteria in violence. The scale cross-validated in the cross-sectional group, at the level of .35 for a bivariate correlation using 500 people. That is a very significant correlation. It means that there is some assurance if a person scores high on the predictor score that you will find that their behavior is one of multiple violence, or at least some violence. And if they score low then you can have some assurance that their behavioral score will be one of no violence known or only threats of violence.

You notice that I didn't say I was trying to develop a prediction that took the psychological concepts and predicted that such and such should lead to violence. This is an empirical approach, and the result was that we found that these individuals were action-oriented from their psychological nature. They were emotional individuals. They had a history of prior offenses, of discipline problems and of poorer adjustment in prison. These are similar types of predictors to those found in some studies out in California when some of the work was guided by a theoretical approach rather than just an empirical approach giving us some further assurance. The cross-sectional study on violence is now finished for the time being and we are now into the longitudinal checking of the final cross-validation of that predictor. The final judgement will be whether or not the score predicts the behaviors of violence in the longitudinal sample. We are beginning the cross-sectional study of recidivism. We are going to augment that with our cross-sectional information on a number of crimes, again after matching the individuals for age so that we can get a homogeneous group of individuals on whom we have the predictions but for whom no use has been made. We will follow the current longitudinal group and that longitudinal group for a period of time to verify that if we had used the judgment procedure that has been developed, it would have improved the decision process. That is the final test of the project. If that test is positive, we can deliver this for implementation to the Board.

How is the Board going to use it? They will use it as they find it best helps them. The Board did not deliver to us some charge to develop another salient factors approach which will give a strict numerical score to be rated in a matrix against a severity of offense in order to mechanically define the parole decision. The intent of the project is to develop more systematic methods of developing information for the Board's consideration so that they will have guidance in the interview, guidance in their field surveys, and guidance in making searches of actual behavior. We are attempting to augment the decision-making process, not to supplant the decision process with a mechanical tool. The exact form of the final product is to be determined yet, and I suspect that it is going to have as much verbal information as numeric. That is, it will describe the individual as much as it gives numbers about that individual. We are not developing a new I.Q. score, we are

developing an information source. This is the approach we have found to be most valuable in the selection process in industry. We don't make selection decisions for industry; we deliver predictive information to industry to help them make decisions. The selection process works best where the employing agency puts that information together with their other sources of information and uses it as an aid in making decisions rather than as a cop-out to make the decision for them.

Our anticipation is that we are going to have the same level of success here as we have in industry and that is going to be significant. We are going to give some systematic procedure to the Board that they can use, if they choose, to help make the decision-making process easier, more systematic, more equitable, and better. That is our goal.



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