DESIGNING MORE EFFECTIVE CORRECTIONAL PROGRAMS USING EVIDENCE-BASED PRACTICES

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I. INTRODUCTION

It is rare today to read an article or study on correctional intervention programs that that does not refer to the work of Andrews, Bonta and Gendreau and the risk, need, responsivity (RNR) principles (Andrews and Bonta 1994; Gendreau 1996). Through the lens of RNR scholars and practitioners alike have a framework by which they can better study and understand criminal conduct and the effectiveness (or lack thereof) of correctional programs. This model has been widely accepted in the USA, and I believe that approach provides a framework for designing effective correctional programs. This paper will examine the principles that underlie effective programs and discuss how these principles translate into actual practice.

II. EVIDENCED-BASED DECISION-MAKING

First we need to understand that there are different forms of evidence: the lowest form is anecdotal evidence — stories, opinions, testimonials, case studies, etc. Many rely on it, and it often makes us feel good, especially when it reinforces our work. The highest form is empirical evidence — research, data, results from controlled studies, etc. Sometimes it doesn't make us feel good, especially when it challenges our notions of what works.

Evidence-based practice is easier to think of as evidence-based decision-making, which involves several steps and encourages the use of validated tools and treatments; it is not just about the tools you have but also how you use them. There are five steps to evidence-based decision-making:

i. Assessment;
ii. Relevant research;
iii. Available programming;
iv. Evaluation;
v. Professionalism and knowledge from staff.

Assessment is the first step. Consider that almost anything you want to fix starts with assessment; whether it be your car, an illness, or an offender. Knowing and following the relevant research is the second step. Having programs available to provide services and treatment is next. Evaluation means that the programs are data driven and have in place processes to measure and gauge offender progress, service delivery, staff competencies, etc. Finally, professionalism and knowledge from staff, hiring based on some key values, conducting initial and on-going training, providing supervision and feedback, and use of some core correctional practices (which will be discussed later) are all necessary.

III. WHAT DOES THE RESEARCH TELL US ABOUT EFFECTIVE CORRECTIONAL PROGRAMS?

A. **Principles of Effective Intervention**

It is important to remember that one can find research to support just about anything, and that looking at one study can be misleading. One of the ways we attempt to address this problem is by looking at a body of

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knowledge. For example, most of us believe that cigarette smoking is bad for our health. How do we know this? "Research" you say, but don't you think that given the hundreds of studies that have been conducted there is a study out there that says that cigarette smoking is not that bad? Well, this study may have been funded by the tobacco industry, but if you wanted to justify smoking based on some research, you can probably find a study or two that say it is not that bad. The reason that most of us believe that smoking is harmful is because there is a body of knowledge concerning smoking and health that says that if you smoke a lot you increase your chances of cancer, heart disease, emphysema and so forth. It is also one of those areas where our anecdotal evidence aligns with our empirical evidence; most of us know someone who has had health problems due to smoking.

The good news is that we also have a pretty large body of knowledge surrounding correctional interventions and programs. This body of research has indicated that correctional services and interventions can be effective in reducing recidivism for offenders; however, not all programs are equally effective. The most effective programs are based on some principles:

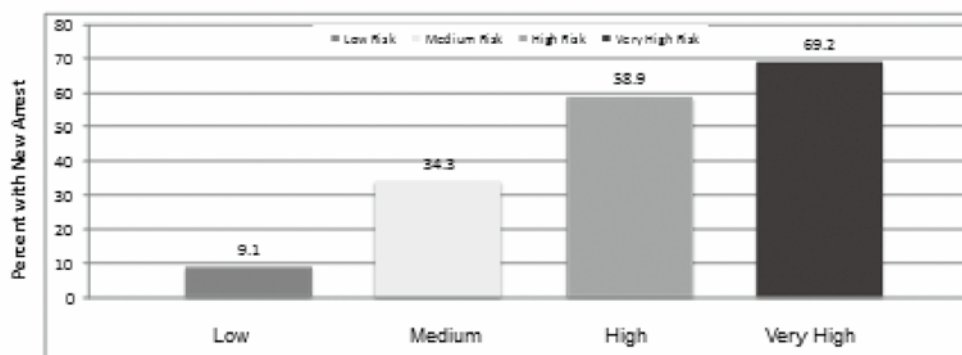i. Risk (Who);
ii. Need (What);
iii. Responsivity (How).

B. Risk Principle

Let's start with the risk principle. This is the "who" to target with correctional programs. Risk refers to risk or the probability of reoffending and not the seriousness of the offense. This is an important distinction since the seriousness of the offense will usually trump the risk of reoffending when it comes to deciding a sentence. However, higher-risk offenders, even those that commit less serious offenses, require a great deal more services and interventions if their risk is going to be reduced. There are three elements to the risk principle:

i. Target those offenders with higher probability of recidivism;
ii. Provide most intensive treatment to higher-risk offenders;
iii. Intensive treatment for lower-risk offenders can increase recidivism.

Let's start with the first element. Figure 1 shows an example of the failure rates of offenders on probation based on risk levels determined through an actuarial instrument.

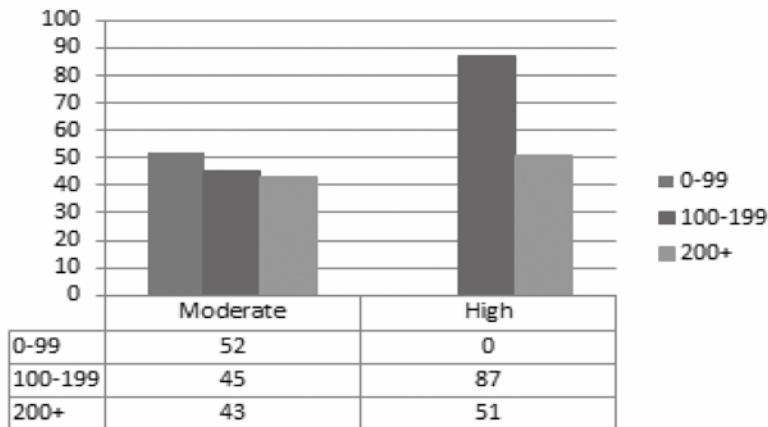**Figure 1. Males: Risk Level by Recidivism for the Community Supervision Sample**

To illustrate the risk principle, if you have 100 high-risk offenders, about 60% will fail. If they are placed in a well-designed evidence-based program for sufficient duration, you might reduce the failure rate (let's say to 40%, in which case this would be a 30% reduction in recidivism). Conversely, if you have 100 low-risk offenders, the failure rate would be about 10%. According to the risk principle, if you put them in the same program, you will increase the failure rate (let's say to 20%). So in the end, even though there is a significant reduction of recidivism for high-risk offenders, the lower-risk offenders still had a lower recidivism rate. The mistake we often make is comparing high risk to low risk rather than looking for treatment effects.

The second aspect of the risk principle is that we need to provide the most intensive treatment to higher-risk offenders. The question is: What does more "intensive" treatment mean in practice? Most studies show that the longer someone is in treatment, the greater the effects; however, effects tend to diminish if treatment goes too long. We are just starting to see research in corrections examining the dosage of treatment needed to achieve effect. Here are some guidelines based on that research:

- Higher-risk offenders will require much higher dosages of treatment
- Rule of thumb: 100 hours for moderate risk
- 200+ hours for higher risk
- 100 hours for higher risk will have little effect
- Does not include work/school and other activities that are not directly addressing criminogenic risk factors

Figure 2 shows the results from a recent study we did in Ohio when treatment dosage was increased for moderate- and high-risk offenders.

Figure 2. Recidivism Rates by Risk Level and Dosage

	Moderate	High
0-99	52	0
100-199	45	87
200+	43	51

Sperber, K. Latessa, E., and Makaros, M. (2011). Examining the Interaction between Level of Risk and Dosage of Treatment. Center for Criminal Justice Research, University of Cincinnati.

The third element of this principle states that when we place lower-risk offenders in our more intensive structured programs we often increase their failure rates (and thus reduce the overall effectiveness of the program). There are several reasons we believe this occurs. First, placing low-risk offenders in with higher-risk offenders only serves to increase the chances of failure for the low risk. For example, let's say that your teenage son or daughter did not use drugs but got into some trouble with the law. Would you want them in a program or group with heavy drug users? Of course you wouldn't since it is more likely that the higher-risk youth would influence your child more than the other way around.

Second, placing low-risk offenders in these programs also tends to disrupt their pro-social networks; in other words, the very attributes that make them low risk become interrupted, such as school, employment, family, and so forth. Remember, if they do not have these attributes it is unlikely they are low risk to begin with. The risk principle can best be seen from our 2002 study of 13,000 offenders in Ohio who were placed in a halfway house or community-based correctional facility (CBCF). See Figures 3 and 4. The study found that the recidivism rate for high-risk offenders who were placed in a halfway house or CBCF was reduced, while the recidivism rates for the low-risk offenders that were placed in the same programs actually increased. We replicated this study in 2010 with over 20,000 offenders and once again saw the same effect. See Figures 5 and 6. We have also seen the risk principle with juveniles, female offenders and sex offenders.
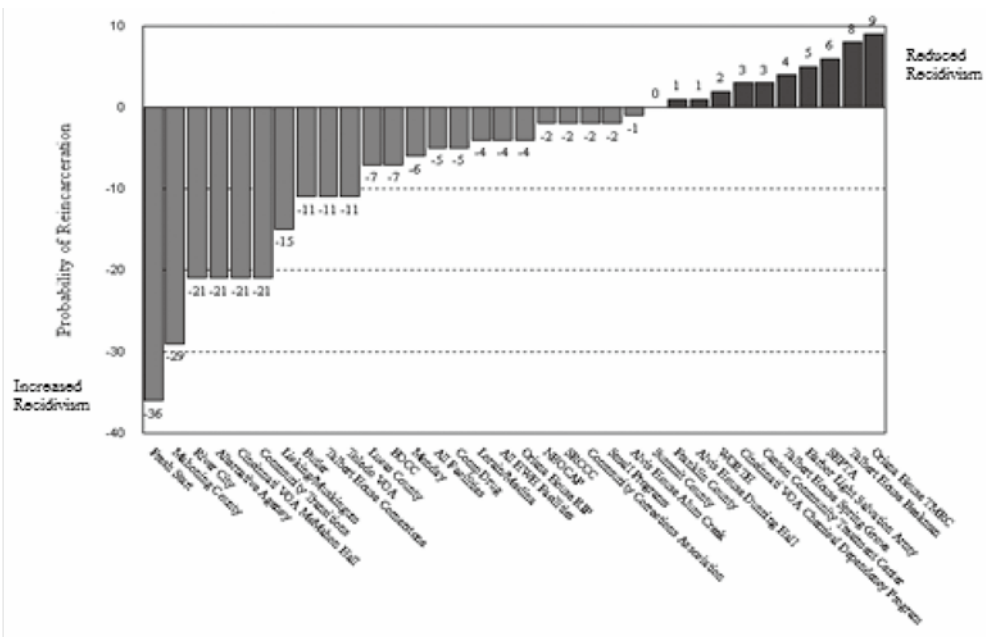
Figure 3. Treatment Effects for Low-Risk Offenders
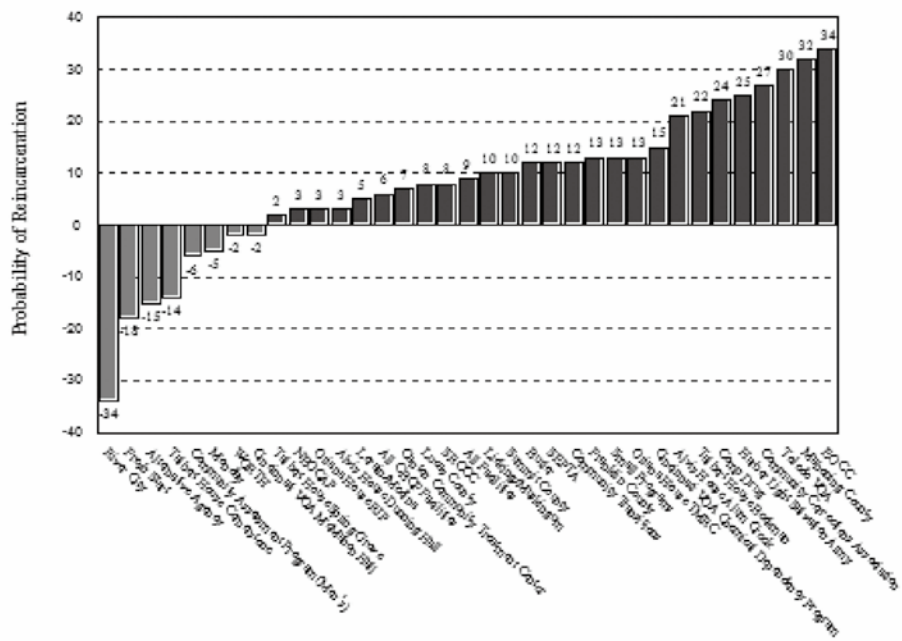

Figure 4. Treatment Effects for High-Risk Offenders

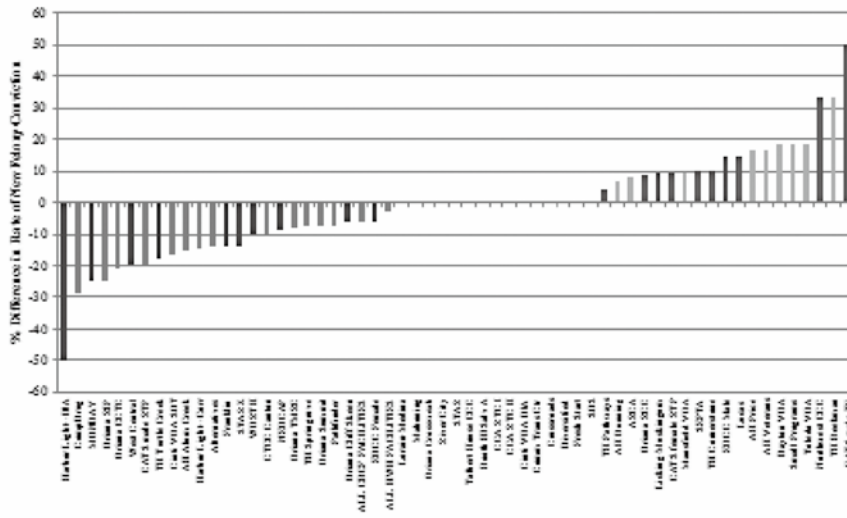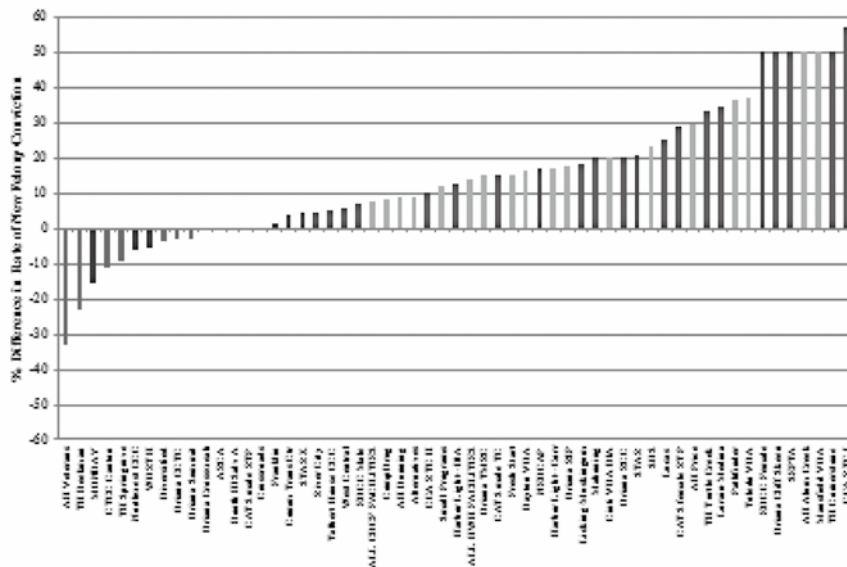**Figure 5. Treatment Effects for Low Risk**

Figure 6. Treatment Effects for High Risk

C. The Need Principle

The second principle is referred to as the need principle, or the "what" to target — criminogenic factors that are dynamic and are highly correlated with criminal conduct. The need principle states that programs should target crime producing needs, such as antisocial attitudes, values, and beliefs, antisocial peer associations, substance abuse, lack of problem solving and self-control skills, and other factors that are highly correlated with criminal conduct. Researchers such as Andrews, Bonta, Gendreau and others have identified a major set of risk factors:

i. Antisocial/pro-criminal attitudes, values, beliefs and cognitive-emotional states;

ii. Pro-criminal associates and isolation from anti-criminal others;

iii. Temperamental and antisocial personality patterns conducive to criminal activity including:
     Weak socialization
     Impulsivity
     Adventurous

> Restless/aggressiveness
> Egocentrism
> A taste for risk
> Weak problem-solving/self-regulation & coping skills

iv. A history of antisocial behavior;

v. Familial factors that include criminality and a variety of psychological problems in the family of origin including:

> Low levels of affection, caring, and cohesiveness
> Poor parental supervision and discipline practices
> Outright neglect and abuse

vi. Low levels of personal, educational, vocational, or financial achievement;

vii. Low levels of involvement in pro-social leisure activities;

viii. Substance Abuse.

Although these eight domains constitute the major set, the first four are considered the most important and are often referred to as the "big four".

A recently study conducted by the Pennsylvania Department of Corrections confirmed the importance of these risk factors. This study examined men and women on parole and looked at who failed and who succeeded. Table 1 summarizes the results:

Table 1

Results from the Pennsylvania Study by Domain

Failures Were:

Social Network and Living Arrangements:
- More likely to hang around with individuals with criminal backgrounds
- Less likely to live with a spouse
- Less likely to be in a stable supportive relationship
- Less likely to identify someone in their life who served in a mentoring capacity

Employment & Financial Situation:
- Less likely to have job stability
- Less likely to be satisfied with employment
- Less likely to take low-end jobs and work up
- More likely to have negative attitudes toward employment & unrealistic job expectations
- Less likely to have a bank account
- More likely to report that they were "barely making it" (yet success group reported over double median debt)

Alcohol or Drug Use:
- More likely to report use of alcohol or drugs while on parole (but no difference in prior assessment of dependency problem; and poor management of stress was a primary contributing factor to relapse)

Attitudes and Behavioral Patterns:
- Had unrealistic expectations about what life would be like outside of prison
- Had poor problem solving or coping skills
- Did not anticipate long-term consequences of behavior
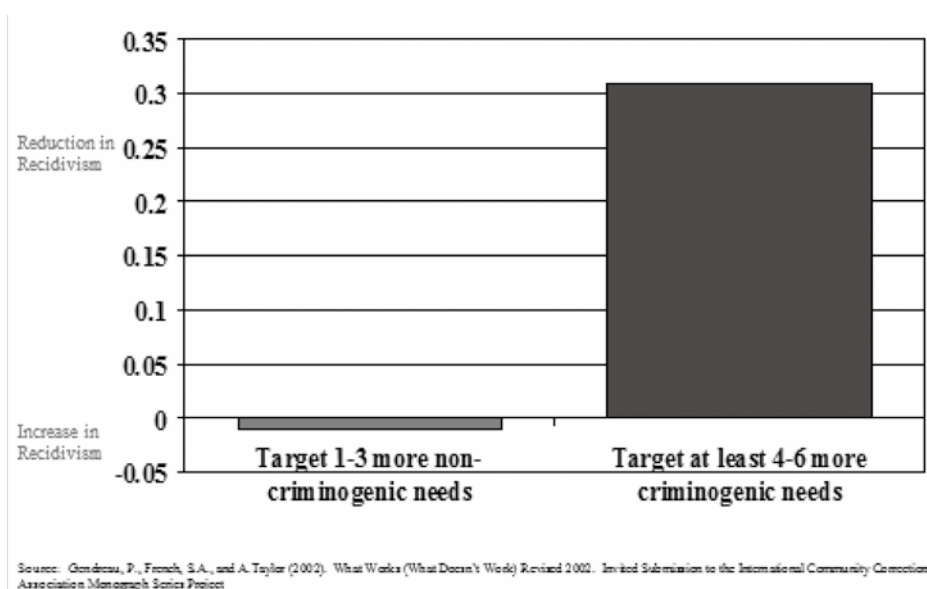- Failed to utilize resources to help themselves

- Acted impulsively to immediate situations
- Felt they were not in control
- More likely to maintain anti-social attitudes
- Viewed violations as an acceptable option to the situation
- Maintained general lack of empathy
- Shifted blame or denied responsibility

(Bucklen, K. and Zajac, G. (2009). But Some of them Don't Come Back (to Prison!). Prison Journal, 89:239-264.

Interestingly, successes and failures did not differ in difficulty in finding a place to live after release, and were equally likely to report eventually obtaining a job. The most important factors centered around attitudes, whether they be about work, or behavior, social-support systems, peers, and temperament and skill deficiencies.

It is also important to remember that programs need to ensure that the vast majority of their interventions are focused on these factors. Figure 7 shows that effects on recidivism are much stronger when the density of criminogenic factors is higher than targeting non-criminogenic factors.

Figure 7. Targeting Criminogenic Need: Results from Meta-Analyses

Source: Gendreau, P., French, S.A., and A. Taylor (2002). What Works (What Doesn't Work) Revised 2002. Invited Submission to the International Community Corrections Association Monograph Series Project

Non-criminogenic factors such as self-esteem, physical conditioning, understanding one's culture or history, and creative abilities will not have much effect on recidivism rates. An example of a program that tends to target non-criminogenic factors can be seen in offender-based, military-style boot camps. These programs tend to focus on non-criminogenic factors, such as drill and ceremony, physical conditioning, discipline, self-esteem, and bonding offenders together. Because they tend to focus on non-crime-producing needs, most studies show that boot camps have little impact on future criminal behavior. Table 2 shows some of the so-called "theories" my staff and I have come across over the years when assessing correctional programs.

Table 2

Some so-called "theories" we have come across
- "Offenders-lack-creativity theory"
- "Offenders-need-to-get-back-to-nature theory"
- "Offenders-lack-discipline theory"
- "Offenders-have-low-self-esteem theory"
- "Offenders-need-to-change-their-diet theory"
- "Treat-them-as-babies-&-dress-them-in-diapers theory"

- "We-just-want-them-to-be-happy theory"
- "Male-offenders-need-to-get-in-touch-with-their-feminine-side theory"

It is also important to remember, that high-risk offenders often have multiple risk factors, which is why programs that tend to be one dimensional are much less effective than programs that target multiple risk factors. For example, a recent study conducted by Morgan, Fisher and Wolff (2010) included 414 adult offenders with mental illness (265 males, 149 females) and assessed their criminal thinking using several assessment tools and compared them to a sample of non-mentally ill offenders. They found:

- 66% had belief systems supportive of criminal lifestyles (based on Psychological Inventory of Criminal Thinking Scale (PICTS)

- When compared to other offender samples, male offenders with mental illness scored similar or higher than non-mentally disordered offenders.

- On the Criminal Sentiments Scale-Revised, 85% of men and 72% of women with mental illness had antisocial attitudes, values and beliefs — which was higher than the incarcerated sample without mental illness.

The researchers concluded that criminal thinking styles differentiate people who commit crimes from those who do not, independent of mental illness, and that incarcerated persons with mental illness are often both mentally ill *and* criminal. They stressed that programs needs to be designed to address co-occurring problems.

D. Responsivity (How)

The third principle is the responsivity, or the "how"— the ways in which correctional programs should target risk and need factors. This principle essentially states that the most effective programs are behavioral in nature. Behavioral programs have several attributes. First, they are centered on the *present* circumstances and risk factors that are responsible for the offender's behavior. Hanging around with the wrong people, not going to work or school, and using drugs or alcohol to excess are examples of current risk factors, whereas focusing on the past is not very productive, mainly because one cannot change the past. Second, behavioral programs are *action* oriented rather than talk oriented. In other words, offenders do something about their difficulties rather than just talk about them. These approaches are used to teach offenders new, pro-social skills to replace the antisocial ones (e.g. stealing, cheating, lying, etc.) through modeling, practice, and reinforcement. Examples of behavioral programs would include those that adhere to a structured social-learning approach where new skills are taught and behaviors and pro-social attitudes are consistently reinforced, and cognitive-behavioral programs that target attitudes, values, peers, substance abuse, anger, etc. Interventions based on these approaches are very structured and emphasize the importance of modeling and behavioral rehearsal techniques that engender self-efficacy, challenge of cognitive distortions, and assist offenders in developing good problem solving and self-control skills. These strategies have been demonstrated to be effective in reducing recidivism. Non-behavioral interventions that are often used in programs would include drug and alcohol education, fear tactics and other emotional appeals, talk therapy, non-directive client-centered approaches, having them read books, shaming them, lectures, milieu therapy, and self-help. There is little empirical evidence that these approaches will lead to long-term reductions in recidivism. Table 3 shows a list of programs and interventions that have not been found to be effective in reducing recidivism:

Table 3

- Programs that cannot maintain fidelity
- Programs that do not target criminogenic needs
- Drug prevention classes focused on fear and other emotional appeals
- Shaming offenders
- Drug-education programs
- Non-directive, client-centered approaches
- Bibliotherapy
- Freudian approaches

- Talking cures
- Self-Help programs
- Vague, unstructured rehabilitation programs
- "Punishing smarter" (boot camps, scared straight, etc.)

IV. BEHAVIORAL APPROACHES IN CORRECTIONS

A. Social-Learning and Cognitive-Behavioral Interventions

The most effective correctional programs are based on structured social learning where new skills and behaviors are modeled, and cognitive-behavioral approaches that target criminogenic risk factors. Social learning is not a theory of criminal behavior but rather a theory of human behavior. It is the process through which individuals acquire attitudes, behavior, or knowledge from the persons around them. Both modeling and instrumental conditioning appear to play a role in such learning. While the process of social learning may be complex, the concept is not. If you have children you know this to be true because for many of us we wake up one day and find that we have turned into our parents; the last people we thought were going to be when we were teenagers.

There are four basic principles of cognitive-behavioral intervention:
  i. Thinking affects behavior;
  ii. Antisocial, distorted, unproductive irrational thinking can lead to antisocial and unproductive behavior;
  iii. Thinking can be influenced;
  iv. We can change how we feel and behave by changing what we think.

There are a several reasons that CBT can be effective in reducing recidivism:
  i. Based on scientific evidence (cognitive & behavioral theories);
  ii. Based on active learning (not talk therapy);
  iii. Focus on the *present* (how offenders currently think and behave);
  iv. Based on learning (most crime is learned);
  v. Target major criminogenic needs (e.g. attitudes, values, beliefs);
  vi. Provides structure to groups and programs (manualized treatment).

There are also a number of reasons that CBT is popular in corrections:
- Existing staff can be trained on CBT
- Relatively cheap to deliver
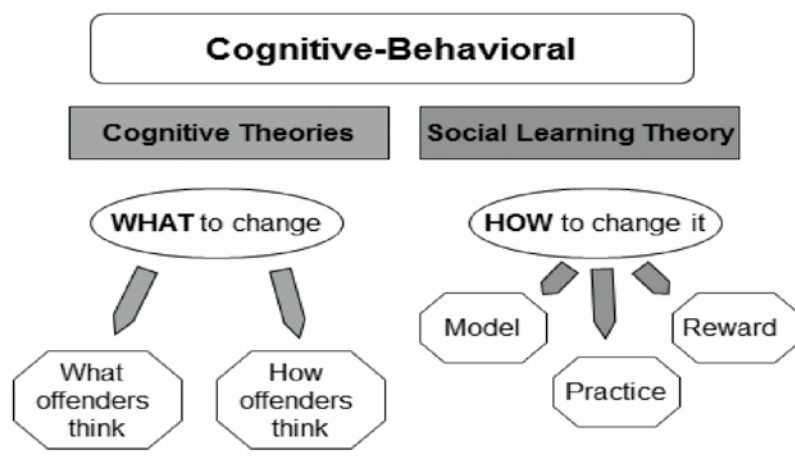- Wide range of curriculums are available

A 2006 meta-analysis by Landenberger and Lipsey found that overall programs that used CBT reduced recidivism about 25%, but the most effective configurations found more than 50% reductions. Factors that were not significant included the setting, juveniles versus adults, minorities or females, or the brand name of the curriculum. Findings were stronger if:
- At least 2 sessions per week
- Implementation was monitored
- Staff were trained on CBT
- Barriers were removed so to have a higher proportion of treatment completers
- Higher-risk offenders
- Higher if CBT is combined with other services

These findings clearly support the risk, need, responsivity and fidelity principles.

Figure 8 shows how cognitive-behavioral interventions combine elements of cognitive theories and Social Learning Theory.

Figure 8

The combination of cognitive theories and social learning theories provides a framework for changing offender behavior. An important aspect of this model includes the use of rewards in teaching new skills. In a recent study that examined the increase of rewards, researchers found that as the ratio of rewards to punishments increased to 4:1 and above, the success rate of probations on intensive supervision increased dramatically. This can be seen in Figure 9.

Figure 9. Ratio of Rewards to Punishments and Probability of Success on Intensive Supervision
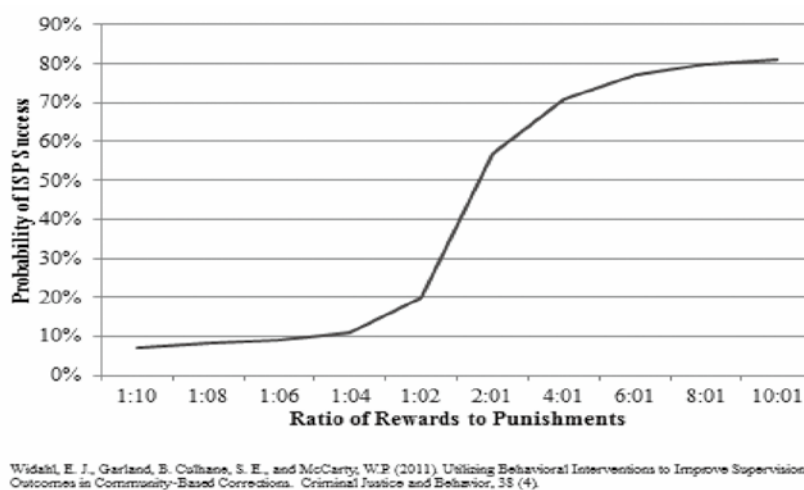

Widahl, E. J., Garland, B. Culhane, S. E., and McCarty, W.P. (2011) Utilizing Behavioral Interventions to Improve Supervision Outcomes in Community-Based Corrections. Criminal Justice and Behavior, 38 (4).

Table 4 shows the list of rewards and punishers used in the program.

Table 4. List of Rewards and Sanctions

Sanctions	Rewards
• Verbal reprimand	• Verbal praise and reinforcement
• Written assignment	
• Modify curfew hours	• Remove from EM
• Community service hours	• Level advancement
• Restrict visitation	• Increased personal time
• Program extension or regression	• Approved special activity
• Electronic Monitoring	• Fees reduced
• Inpatient or outpatient txt	• Approve of extend special visitation
• Detention time	

Widahl, E. J., Garland, B. Culhane, S. E., and McCarty, W.P. (2011) Utilizing Behavioral Interventions to Improve Supervision Outcomes in Community-Based Corrections. Criminal Justice and Behavior, 38 (4).

Since these approaches teach offenders how to handle risky situations, it is not surprising that programs that use behavioral approaches have also been found to reduce jail and prison misconducts. In a meta-analysis that examined 68 studies involving over 21,000 offenders, French and Gendreau found that behavioral programs significantly reduced all types of misconducts over other approaches. Figure 10 shows the results.

Figure 10. Average Effect Size for Misconducts by Treatment Type

Consistent with other research, they also found that behavioral programs that targeted multiple criminogenic risk factors and those that were rated as high quality produced the strongest effects. These findings can be seen in Figures 11 and 12.

Figure 11. Average Effect Size for Misconducts by Number of Criminogenic Needs Target
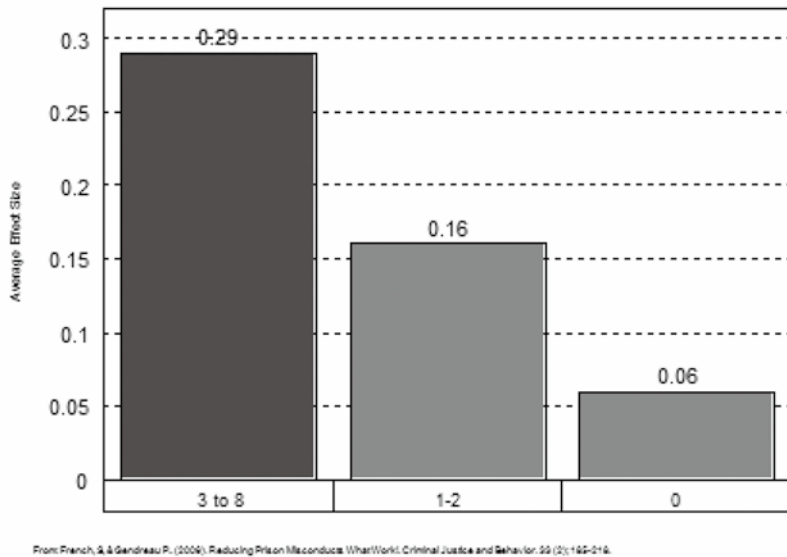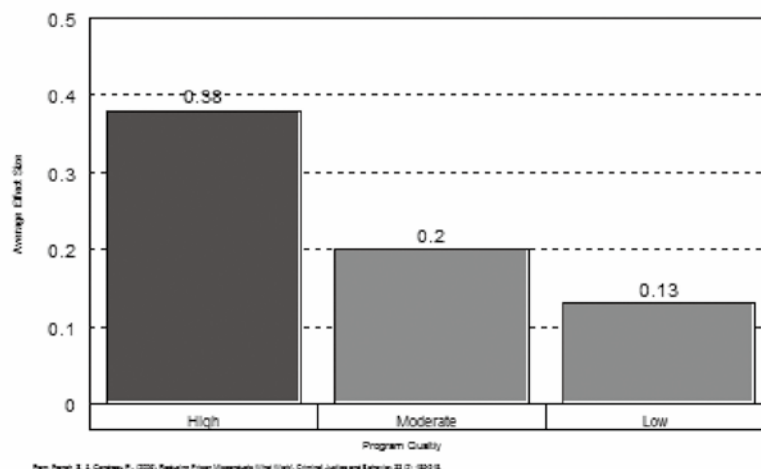
Figure 12. Average Effect Size for Misconducts by Program Quality

Finally, more specific responsivity relates to a host of other considerations that will increase correctional program effectiveness. These include targeting barriers that offenders face such as a lack of motivation, literacy, mental health issues, or other barriers that can influence someone's participation in a program. It is also important that programs be delivered with fidelity and have well-trained and interpersonally sensitive staff as well as assist with other needs that the offender might have. Addressing these attributes can enhance correctional program effectiveness.

B. Core Correctional Practices

Core correctional practices (CCPs) are skills that correctional practitioners should use on a day-to-day basis to interact effectively with an offender population. These skills are designed not only for managing offender behavior but also to target long-term behavioral change. CCPs compliment a program's adherence to the risk, need and responsivity principles. CCP includes the following specific skills: effective reinforcement, effective disapproval, effective use of authority, interpersonal relationships, anti-criminal modeling, cognitive restructuring, structured skill building and problem solving. Evidence suggests that incorporation of such strategies, in addition to meeting the principles of effective intervention, increases the effectiveness of corrections-based programming.

C. Effective Practices in Correctional Supervision

Recently there have been several models developed to use CCPs with offenders. These include the Strategic Training Initiative in Community Supervision (STICS, by Bonta and his associates, the Staff Training Aimed at Reducing Re-Arrests (STARR) by the Administrative Office of the United States Courts, and Effective Practices in Correctional Supervision or EPICS, by researchers at the University of Cincinnati.

At the University of Cincinnati we have recently been training probation and parole officers (case managers) on this model. We have also developed a version that probation and parole officers can use with families in the home. The purpose of the EPICS model is to teach case managers and those that work with offenders how to apply the principles of effective intervention and core correctional practices to their work with offenders. The EPICS model is currently being piloted in a number of jurisdictions and settings, and our analysis of the audio tapes and data from these sites indicates that the trained case managers are using the skills at a higher rate than untrained staff. The core correctional practices (or competencies) are organized into an overall framework to assist with the application of specific skills within the context of correctional supervision. This overall framework, or "Action Plan," assists with the development and implementation of case management plans to target the criminogenic needs of higher-risk offenders. With the EPICs model, case managers follow a structured approach to their interactions with offenders. Specifically, each session includes four components.

    i.   Check-In, in which the case manager determines if the offender has any crises or acute needs, builds rapport and discusses compliance issues;

ii.   Review, which focuses on the skills discussed in the prior session, the application of those skills, and troubleshooting continued problems in the use of those skills;

iii.   Intervention, where the case manager identifies continued areas of need, trends in problems the offender experiences, teaches relevant skills, and targets problematic thinking;

iv.   Homework and Rehearsal is when the offender is given an opportunity to see the model the case manager is talking about, provides opportunities to role play, assignment of homework, and gives instructions that the offender should follow before the next visit.

The EPICs model is designed to use a combination of monitoring, referrals, and face-to-face interactions to provide the offender with a higher "dosage" of treatment interventions, and make the best possible use of time to develop a collaborative working relationship. Furthermore, the model helps translate the risk, needs and responsivity principles into practice. Case managers are taught to increase dosage to higher-risk offenders, stay focused on criminogenic needs, especially the thought-behavior link, and to use a social-learning, cognitive-behavioral approach to their interactions. The EPICs model is not intended to replace other programming and services but rather is an attempt to more fully utilize case managers as agents of change.
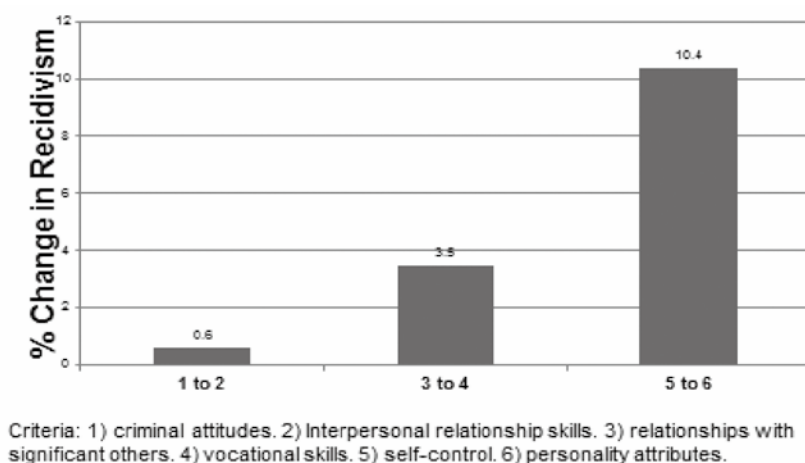
These are very exciting initiatives designed to change how correctional professionals work with offenders. Initial findings from STICS, STARR and EPICS are showing that trained officers are much more likely to use the skills than untrained officers, are increasing retention rates, and showing reductions in new arrests.

V. RESULTS FROM A RANGE OF CORRECTIONAL PROGRAMS

In order to further illustrate the effects of these principles in actual correctional programs, the results from three large-scale studies will be reviewed. These three studies, when taken together, involved over 46,000 offenders and over 150 correctional programs, including both residential and non-residential programs.
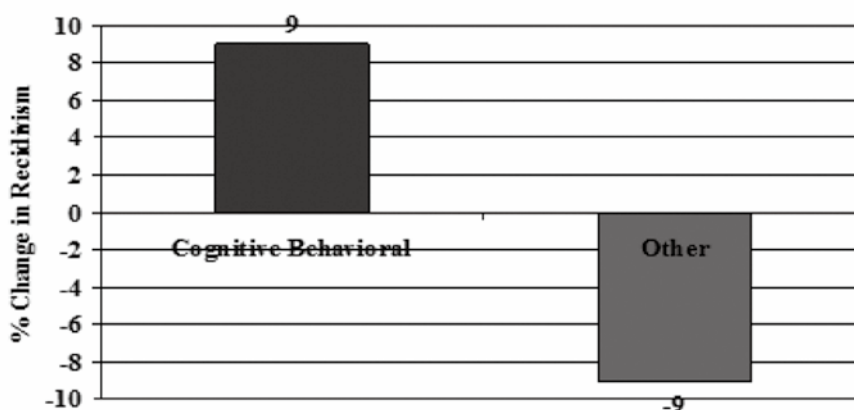
Figure 13 clearly shows that the more criminogenic needs targeted by a program, the greater the reduction in recidivism rates. Targeting a higher number of crime-producing needs increased the effects of the programs on recidivism rates. Conversely, programs that targeted an insufficient number of criminogenic needs — one or two — showed only a slight decrease in failure rates.

Figure 13. Treatment Targets

Criteria: 1) criminal attitudes. 2) Interpersonal relationship skills. 3) relationships with significant others. 4) vocational skills. 5) self-control. 6) personality attributes.
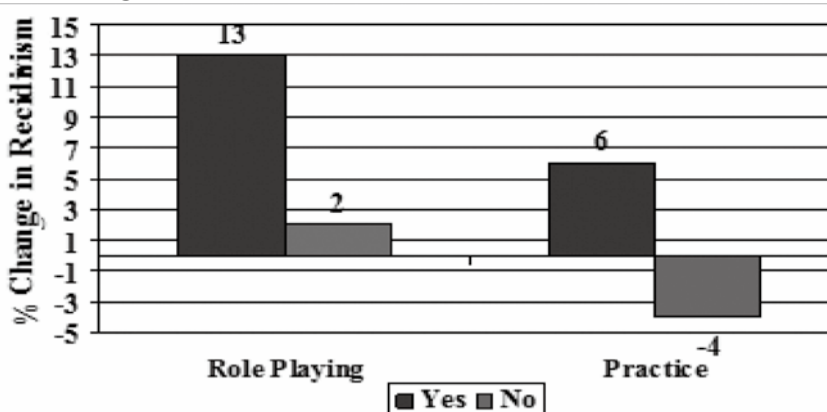
To study the treatment principle we examined several factors, including the treatment model used by the program and the use of behavioral strategies, such as role-play and the practice of new skills. As Figure 14 illustrates, if the program used a cognitive-behavioral model, the result was a reduction in recidivism. All other models (eclectic, 12-Step, talk therapy, etc.) produced a negative effect.

Figure 14. Relationship between Treatment Model and Treatment Effect for Residential Programs

The use of behavioral strategies, such as role-playing and practicing new behaviors, was also related to reductions in recidivism; programs that used these techniques produced stronger results in almost every group than those that only used them occasionally or not at all. See Figure 15.

Figure 15. Why practice? Relationship between Treatment Activities and Treatment Effect for Residential Programs
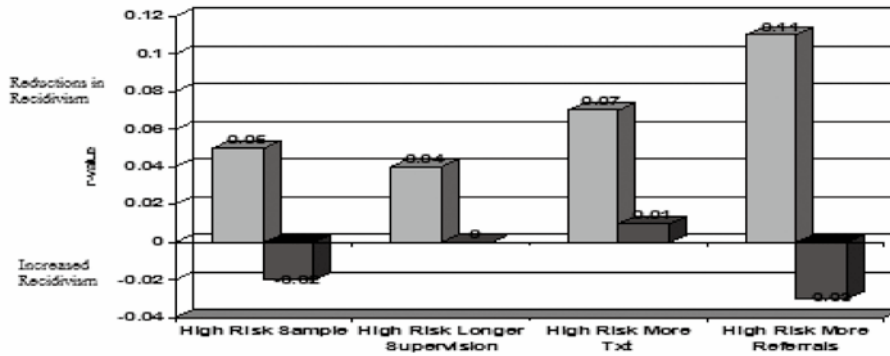

The effect of these principles in actual correctional programs can also be seen from the results from a large study of non-residential community correctional programs we conducted in Ohio. These were primarily probation and jail diversion programs, and included day reporting centers, electronic monitoring, work release, and intensive supervision programs and included over 13,000 offenders. The data were analyzed around the RNR principles to identify program attributes that were associated with successful programs. Four major factors were observed to be significantly related to recidivism among all the programs:

    i.   The proportion of higher-risk offenders in the program (at least 75% of offenders in the program were moderate or higher risk);

    ii.   The level of supervision for higher-risk offenders (high-risk offenders averaged longer periods of supervision than low risk;

    iii.   The provision of more treatment for higher-risk offenders (at least 50% more time spent in treatment);

    iv.   The number of referrals to outside agencies for services for higher-risk offenders (at least 3 referrals for every 1 received by low risk).
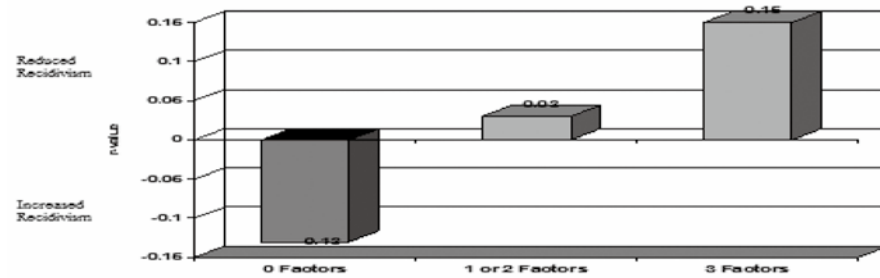
Figure 16 shows the effects of these four factors on recidivism rates.

Figure 16. Change in Recidivism by Program Factors for Non-Residential Programs

The additive effects of these factors were in turn applied to each of the programs in the study. Nine of the programs in the study did not produce indicators of any of these four factors, and the result of the average change in recidivism rates for these nine programs was a 13% increase in recidivism. Thirty-five programs met one or two of the factors and produced a 3% reduction in recidivism. Four programs met three of the factors and showed a 16% reduction in recidivism. None of the programs met all four. These results are presented in Figure 17.

Figure 17. Change in Recidivism by 4-Point Factor Score for Non-Residential Programs

VI. SUMMARY

Over the years there has been considerable research that has supported the risk, need, and responsivity principles. Focusing on high-risk offenders is an important factor and clearly leads to greater program effectiveness. There is also a cost for failing to adhere to the risk principle. In the best scenario, including low-risk offenders in intensive interventions results in a waste of resources and no change in the low-risk offenders' behavior. In the worst scenario, including low-risk offenders in intensive programs has a detrimental effect. Clearly, low-risk offenders should not be placed with high-risk offenders since the effects are often counterproductive. Findings also support increasing the level of supervision in accordance with risk level and varying the number of services or referrals by risk level. In other words, higher-risk offenders appear to benefit from a longer and more intense dose of supervision and treatment.

The need principle also matters. The more the services or referrals target criminogenic needs, the stronger the effects. It also became clear that the majority of services should favor targeting criminogenic needs. The model of treatment is also an important consideration when designing effective programs. Behavioral programming has shown the strongest effects across a wide range of programs and settings.

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