CHAPTER 22

Construct Validity: The Importance of Understanding the Nature of the Intervention Under Study

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> Constructs are the central means we have for connecting the operations used in an experiment to the pertinent theory and to the language communities that will use the results to inform practical action. To the extent that experiments contain construct errors, they risk misleading both theory and practice. (Shadish et al. 2002:65)

INTRODUCTION: EXPLICATION OF CONSTRUCTS AS PROBLEMATIC

Commonly researchers address construct validity by asking whether the sample selected permits a fair examination of the effects of an intervention or phenomenon of interest. The nature of the intervention itself is described and the authors certify that a particular operationalization of the intervention to be used in the study is a "good example" of the intervention and therefore offers a "fair test." In criminology, examples of interventions can include a gamut of programs, strategies, and innovations in procedure in many arenas from courts, prosecution, policing, and corrections. With positive results from early evaluative studies of a particular innovation, a case is sometimes rapidly built for wide adoption of the intervention and related policies, so great a thirst there is for "things that work" in crime prevention or reduction.[1]

Consideration of construct validity is basically made up of two components, explication and measurement (see, e.g., Shadish et al. 2002:66). Without dealing with "explication," that is, having a clear grasp of the key or "prototypical" functions or concepts that serve as the essential constructs underlying a phenomenon, it is difficult to address the concerns associated with the second and more commonly raised part of the construct validity problem: how well measures of the underlying constructs really capture their essence in the research operation. In fact, construct validity considerations in evaluation research are often treated as routine or

[1] See Sherman and Berk (1984) for a famous example.

A.R. Piquero and D. Weisburd (eds.), *Handbook of Quantitative Criminology*,
DOI 10.1007/978-0-387-77650-7_22,

given short shrift, as studies move quickly to discussions of designs, analyses, and findings – where controversies are more often addressed. Assessment of a study's construct validity, however, goes directly to the strength of the theoretical and conceptual foundation, upon which the research is based and, therefore, may have important implications for interpreting the findings produced.

This discussion focuses on explication, the first component of the construct validity consideration, because of its below-the-radar status and its potential significance in policy evaluation. Although this paper focuses on the drug court literature as an example, the issues and approaches suggested may apply equally to other examples of policy relevant criminological study. As the drug court innovation has evolved to the status of a movement based on its claim of reducing drug-related crime, the research has proceeded largely without settling clearly on the nature of the intervention by identifying the essential operating constructs underlying the various applications of the drug court innovation.

Oversimplifying for the purposes of illustrating the explication issue, the question for drug court research is "what is a drug court?" (see Goldkamp 1999) As applied to the widely popular drug court phenomenon, this oversight in clearly identifying and explicating the drug court's underlying constructs has opened the door to all sorts of construct validity problems that may undermine the confidence one can have in accepting the favorable inferences of impact being drawn from the growing body of empirical literature on drug courts. This chapter discusses the construct validity issue as applied to drug courts through the author's work with colleagues[2] in this area over the decade of their establishment. This chapter not only describes the problem, but also how various steps were taken to address it. Though the approach evolved from drug court research, the lessons identified – or at least the questions asked – can be extended to study of other crime prevention or justice innovations, from targeted policing to therapeutic communities in prisons.

CONSTRUCT VALIDITY AND THE EXAMPLE OF DRUG COURT RESEARCH

Reviews of drug court evaluations (e.g., Wilson et al. 2006; Cissner and Rempel 2005; GAO 1995, 1997, 2005; Belenko 1998, 1999, 2001) suggest that drug courts can produce lower rates of reoffending among participants than among nonparticipant comparison groups. This does not mean to suggest that there was a consensus among studies in finding a crime-reduction effect (GAO 1995), nor a consistency in the effect sizes when effects were found, for example, in a meta-analysis of drug court impact (Wilson et al. 2006). The favorable state of the findings has led some observers (including the current author) to conclude that, based on the overall body of the evidence, however, drug courts "work," or at least can work.

This favorable generalization about the impact of drug courts on drug offenders has in fact become a widely accepted "conventional wisdom" – notwithstanding a full array of caveats and methodological concerns concerning the research that produced these favorable findings, including problems of sampling, dissimilar design and reliance on mostly nonexperimental approaches (but see, e.g., Marlowe et al. 2003a, b, 2005, 2006; Gottfredson and

[2] These colleagues included Michael White, Jennifer Robinson, Doris Weiland, and James Moore, variously contributing to research initiatives in Miami, Philadelphia, Las Vegas, Portland, Reno, San Francisco, Brooklyn, San Bernardino.

Exum 2002; Gottfredson et al. 2003, 2005, 2006) and great diversity in the examples of drug courts and settings studied. This chapter poses the basic question of whether these findings provide sufficiently strong evidence of the innovation's favorable impact without the research having fully investigated and clarified what a drug court "is" in the first place (Goldkamp 1999). The conceptual framework serving as a framework for drug court evaluations – as in the case of other evaluations – is often merely implicit, or flexibly or incompletely discussed or even just absent, making it quite difficult to draw inferences about how the various findings should be interpreted and raising questions about external validity, among other issues.

Setting aside some of the design and analytic issues characterizing the evaluative literature, taken as a whole, drug court research has skirted the conceptually prior problems of core constructs and construct validity by failing to resolve the serious underlying theoretical and empirical question of what a drug court "is." What may appear to some as an obvious or merely academic issue to some is, this chapter argues, so basic that the growing body of favorable findings from the drug court literature may suffer from overconfidence, tantamount to growing a large tree without strong roots. As noted above, this practice is not unique to the investigation of drug court impact, but may also characterize evaluations of many other justice innovations, from policing to correctional strategies.

Admittedly, given the extraordinary expansion of the drug court movement (now celebrating its 20th year since the first drug court was established in Miami), this question may seem strangely belated – but, this chapter suggests, nevertheless it provides an excellent illustration of the fact that the diffusion of an innovation can take on life of its own, regardless of the soundness of its footing. Without having identified and tested the constructs underlying a drug court's impact – that, is reaching agreement on how drug courts work – how confidently can one accept the conclusion that the many favorable findings generated by an enthusiastic literature really show that drug courts "work"? What factors, moving parts or operations, account for the positive findings? Practitioners' assumptions and conventional wisdoms aside, what has the empirical literature learned about the underlying causal mechanism that makes a drug court a "drug court" and accounts for its impact? One could even argue that drug courts should not be assessed on the basis of their crime reduction impact at all, and that, instead, the driving constructs should be understood as the introduction of a different justice value – some sort of helping or therapeutic orientation – under which measurable "results," such as crime reduction impact, might not be appropriate or at least determinative. (This reasoning is similar to acknowledging that one would not understand the contribution of just deserts punishment through assessing its crime reduction impact – or, in a different way, to arguing that the point is to set in place a helping-oriented court-based approach, whether or not help is actually accepted by participants. The end is to achieve a change in orientation, with secondary outcomes.)

In addition to assessing the comparative impact of the new and developing innovation, the body of (the author's) research used in this critical analysis sought to develop a preliminary model of underlying causal factors to allow impact findings ("do drug courts work?") to be understood in the context of a conceptual framework ("how they work"). The preliminary model produced was meant to provide a reasonable common starting point for further testing and refinement of an understanding of what a drug court "is" for the purpose of research, if not for informing conventional wisdom. This chapter reviews the method employed by the author in the evolving body of research to develop a model representing underlying constructs and discusses its implications for assessing construct validity in drug court research.

If drug courts work, how do they work? If a working model of the underlying factors responsible for their impact can be identified, should not such a causal mechanism be evident from example to example, as the innovation has been implemented so widely across the nation and elsewhere? Put another way, and more fundamentally, if there is no common underlying model explained by key constructs, what sense can be made of evidence from the many different studies of many different drug courts in diverse settings across the land? How can replications be implemented that accurately adopt or, hopefully, improve upon the drug court model?

THE DRUG COURT INNOVATION BRIEFLY DESCRIBED

The nature of the drug court innovation has been well-described elsewhere (see e.g., Goldkamp 1994a, b, 1999, 2000; Hora et al. 1999; Nolan 2001). However, because drug courts have taken on different forms and shapes, it may be useful to provide a brief sketch of the innovation before moving to discussion of underlying constructs and construct validity. For an innovation with such potential for changing existing practices in criminal courts, the original idea was reasonably simple, at least as first conceived in Miami, and was driven by extremely pressing practical problems. Basically, the drug cases in Miami and across the country had become the "tail that wagged the dog" not only in the court system, but also in law enforcement and corrections. The overcrowding caused by these cases in the prisons and jails also translated into an overburdening and clogging of the criminal courts and a rapid burning out of law enforcement, as officers were deployed in the endless search for drug offenders.

This was particularly true in the reaction to the cocaine epidemic of the 1980s in which Miami was a gateway location for Latin American trafficking. In this drug "explosion," the Miami system can be compared with the "canary in the coal mine" in serving as one of the first and hardest hit of American jurisdictions. After trying many other ideas for managing the growing and overwhelming drug caseload in the courts, jails and prisons (including devising an earlier form of drug court that was intended to segregate and process all drug cases faster), the proposed court program in Miami sought to provide drug treatment to the huge volume of seriously charged (i.e., felony-level) substance abusing defendants in a criminal court context. The aim was to reduce the volume of drug offenders swamping the courts, jails and prisons (Goldkamp 1994a, 1999, 2000), and to stop what is seen as the endless recycling of drug offenders in and out and back into the justice system.

The Miami drug court offered felony defendants the opportunity to participate in a several stage, roughly year-long program of judicially supervised and intensive treatment in exchange for withdrawal of charges for successful participants or, later, even expunging of the original arrest charges. Successful participants could leave the justice system without a criminal record and the undesirable collateral consequences that followed. In the original design of drug court, which relied on the participants' frequent attendance in the drug court courtroom, the court leadership insisted on strict accountability to control participating defendants and made clear that the drug court's operations were a criminal justice function, occurring from within the boundaries of the justice system and involving possible criminal justice consequences.

Although the core aim was to provide treatment to substance abusing defendants under a judge's watchful eye, methods encouraging participant accountability were central to the

drug court approach and ranged, for example, from drug testing, to open discussion of treatment progress before the judge and public embarrassment before a full courtroom of other addicts in treatment, to selective use of confinement – what Janet Reno referred to as "motivational jailing"(Goldkamp 1994a) – during the treatment process and, finally, to termination of consistently noncompliant defendants. Under the Miami model, the worst penalty for noncompliance was termination from the program and return of the defendant's criminal case to the regular criminal calendar to be adjudicated in the normal fashion. The original version of the drug court – the "Miami model" – was modified in many ways as the "idea" of drug court was adapted in many different settings. Any one sketch of a drug court will not work to cover the many modifications adopted as the innovation traveled to different locations across the United States and abroad (see Vilcica et al. 2009). The extent to which the "idea" traveled, was altered and became popular in so many settings underscore the difficulty involved in agreeing upon "the" underlying (causal) mechanism defining the drug court and, hence, in interpreting the findings from the many supportive drug court studies.

GETTING TO A CAUSAL MODEL: BEGINNING WITH THE NATION'S FIRST DRUG COURT

At the outset, the problems involved in trying to identify the underlying constructs from the Miami court were tantamount to trying to understand the first and "one real" example of the original innovation. It seemed an easy assignment to understand one program, but it nevertheless proved to be much more difficult, as it involved a rapidly evolving program. The task was to try to learn from officials first-hand, through interview and observation what they were trying to do in creating the first drug court, to describe that and then to try to test outcomes, comparing participants with nonparticipants to assess the innovation's impact (Goldkamp 1999). When there was no movement and only one court to study, the task of understanding the theory and operation of the drug court seemed self-evident. "Drug court" was defined as whatever the Miami officials meant for it to be or, if that was not clear, by whatever the Miami drug court actually "did" in operation. One had merely to describe it, infer underlying constructs and key mechanisms and then assess outcomes.

However, even at this first stage, the task of developing the underlying model was not so straightforward, for one, because the method of developing the drug court by officials in Miami was improvisational. Elements of the court program, such as the procedural steps, the nonadversarial style in the courtroom, what was viewed as "treatment," the link between the treatment clinic and the court, the use of acupuncture (Goldkamp 1994a), were all elements set in motion as building blocks and then adjusted along the way by the leadership group.[3] Several apparent key constructs, for example, concerning the symbolic and instrumental role of the

[3] The "inventors" of the drug court, including Miami's judicial leadership (Hon. Gerald Wetherington), State's Attorney (Hon. Janet Reno), Defender (Hon. David Weed), Office of Substance Abuse Control Director (Timothy Murray), and other administrators had mainly practical aims behind their innovation in the court system. They were guided in developing their approach to treatment – which relied heavily on outpatient treatment and acupuncture – by Dr. Michael Smith of Lincoln Hospital in the Bronx, whose experience was based on years of work among heavily addicted heroin abusers. How and why this improvisation might work was assumed to be commonsensical; "theory" explaining the operation of drug courts was implicit, its explication was not an initial priority. The designers were trying to address urgent practical problems and were not attempting to implement and test theory in crafting the drug court.

judge and the role of the criminal courtroom itself, an adapted version of substance abuse treatment, and participant monitoring and supervision, were implicit in the court's creation and operation. Even the use of acupuncture, not picked up in many of the later drug courts, appeared to be a key element as well.

The need to think more thoroughly about the key elements responsible for producing favorable drug court outcomes became more pronounced, however, with the rapid development of the later drug courts, which benefitted from the lessons and adaptations of the first generation courts. From the point of view of identifying a sound underlying model, however, the task became trickier, as the one interesting court innovation somehow transformed into a "movement." By 1993, for example, a first national meeting of drug courts and sites interested in developing drug courts was organized in Miami by Timothy Murray, Director of Miami's Office of Substance Abuse Control and key leader in designing Miami's drug court. That meeting, revealing then 25 drug courts in operation across the country, showed already that the original and pioneering Miami version of drug court (Goldkamp 1994b) had begun to be widely emulated and, in each new site, modified in specific ways to fit the needs, politics, and circumstances of the different settings. In fact, individual drug courts from the first generation changed in emphasis and procedure over time, even within a single jurisdiction. Thus, by then, four short years after the original court was "invented" in Miami, there were already variations across the courts in what was viewed as "a drug court."

From that meeting, at which now Attorney General Janet Reno keynoted,[4] several important results followed: first, the community of court jurisdictions that were struggling with the same drug-crime problems began to coalesce and launched a common discussion about substance abuse and the role of courts that has continued until this day (Goldkamp 1994b). Second, as a result of the Miami gathering, a formal, professional organization (National Association of Drug Court Professionals) was created to serve as a leadership and lobbying organization for the drug court movement. Third, Janet Reno was convinced to set up the Drug Court Program Office in the Department Justice (to which Timothy Murray was named as first Director). And fourth, the stage was set to provide federal funds for the development of drug courts, to be supervised by the Drug Court Program Office. With the rapid proliferation of the idea and its stimulation of other special court adaptations (community courts, domestic violence courts, mental health courts), the task of identifying the real and critical causal elements in the production of drug court impact on drug crime became more pressing. Yet, in a sense, the task became "easier" because of the many more examples of the innovation there were to consider (Goldkamp 1994b, 1999, 2000): the task was not only to identify their common elements, but ultimately to identify the common elements that were responsible for the advertised impact.

Thus, under the auspices of the general drug court "idea," many versions of the drug court were developed and adopted. Many departed considerably and even philosophically from the original and ongoing (and continually developing) Miami version itself. Observation by the author of many of the new courts revealed not only the growing diversity of the new drug courts, but also the fact that some so-called "drug courts" did not seem to be drawing on many of the original values, procedures, or operating philosophies that were assumed to be essential among the earliest versions of drug courts (Goldkamp 1999).

[4] She was State Attorney in Miami and had been centrally involved in the development of the nation's first drug court before moving to her new post as Attorney General of the United States.

With all these differences, there were certainly common themes. For example, the role of the judge at the center of the process (the fact that participants could appear before the judge many times while in the drug court) was a key common element. Distinguishing between an underlying construct (e.g., judicially supervised treatment), a theme (the pervasive role of the judge), and appropriate measures (frequency of courtroom appearance before the judge, content of judicial interactions) influential in producing outcomes became a more challenging, but key research task, if the impact and ultimate contribution of the drug court were to be well understood.

The center-stage role of the judge stands out as the possibly critical feature, tapping an underlying construct in the drug court. Observation of drug courts by the author during the first decade showed that the drug court "revolves" around the role of the judge and the judge's fairly unrestrained exercise of discretion in the name of accomplishing treatment aims. Certainly, the development of the drug court concept was largely – but certainly not exclusively – a judicially led and piloted innovation. It follows then that the investigation of the role of the judge in the drug court should reveal a really critical underlying element (construct) in terms of impact. If this is so, why and how is its role explained? If not, however, how can the central judicial role be understood? Did the central position of the judge in the innovation evolve as a way to ensure judicial control or to draw in broader political and operational support that judges could provide? Or, was the judge's role in drug court seen as a vehicle for reclaiming judicial discretion lost in the movement toward determinate sentencing structures during the 1970s and 1980s (Goldkamp et al. 2000). From the perspective of identifying key constructs or elements essential in a causal drug court model, how could the impact of the judicial role be measured? Was it necessary for participants to appear so frequently before the judge has became common in many drug courts (Marlowe et al. 2005)? Did the drug court require a dedicated, single judge to operate the court with effective results, or could a number of judges be used in rotation (Goldkamp et al. 2001b)? Could a probation officer produce the same results as a judge? If so, would that finding not raise questions about whether the judge's role represented an underlying construct?

Other elements of the drug court apparatus, certainly, also suggested themselves as key constructs and could have benefitted from empirical testing: To what extent does the use of sanctions generally, or jail in particular, play a key part in producing the sought after results? What impact does the widespread adoption of drug testing contribute to outcomes? Should acupuncture be routinely employed? How important is the courtroom environment in producing the posited drug court "effect"? What parts of the courtroom experience are essential? Is it critical to have drug court transactions carried out publicly before a large audience of other participants? If so, are there ways this should or should not be orchestrated? What ingredients of drug court treatment are essential (detoxification, outpatient, in-patient, group therapy)? Should methadone be employed for heroin abusers in the court? Or, should all substance abusing participants be treated the same? Is addiction the same for the heroin addict and the marijuana user? Does the context of the drug court – its institutional, legal, justice system, social or geographic context – play a critical role in producing the drug court effect? And, finally, how could these possible constructs be measured?

These questions illustrate potential constructs, the elements of the drug court approach that are posited or assumed in one way or the other to be instrumental in the drug court's capacity to bring about the desired change in substance abusing criminal defendants and offenders who participate in the drug court process. Can all of these be important? Do any really play a role in bringing about positive drug court impact or are they ideas or values that advocates wished to introduce into the justice processing of substance abusing offenders? What others

should be considered? Can they all be equally important in producing the drug court effect? How would they work together in a causal model that explained drug court impact? Findings from identifying and testing underlying drug court constructs could change the nature of one's understanding the drug court innovation significantly. Imagine if certain assumed key elements (e.g., the judge's role) were not found to play a role in producing an effect. What if certain other elements (jail) wielded a much larger impact on final outcomes than previously believed? To what extent should such findings have implications for replication and expansion of the innovation itself?

THE WHY OF THE HOW: EXPLORING THEORETICAL CONTEXT

The identification of underlying drug court constructs involves two components: (1) agreement on select core working elements of the drug court innovation, and (2) recognition of some theoretical or at least conceptual explanation of *how* these elements appeared to work together to produce the advertised results (i.e., that they at least reduced drug crime via encouraging desistance of substance abuse among offenders). Themes or core elements, such as those noted above, stand out to the observer of drug courts. However, unfortunately, they may stand out differently depending on the observer and the example of drug court being observed.

In fact, only a small number of studies have examined the role of selected aspects of drug court functioning, moving the research focus from, whether, to how drug courts work.

Several researchers or observers of drug courts have posited theoretical perspectives, which were thought to provide good understandings of the drug court innovation (see, e.g., Goldkamp and Weiland 1993, 1994a, b, 1999, 2000; Goldkamp et al., 2001c; Hora et al. 1999; Longshore et al. 2001; Marlowe et al. 2003a, b, 2005; Nolan 2001; Miethe et al. 2000; Senjo and Leip 2001.) A smaller number tested aspects of their theoretical perspectives related to identifying drug court constructs (e.g., Senjo and Leip 2001; Miethe et al. 2000; Marlowe and Kirby 1999; Marlowe et al. 2005, 2006). Drug courts were viewed as an illustration of therapeutic jurisprudence in action by several authors (Hora et al. 1999; Nolan 2001; Senjo and Leip 2001), adapted from Wexler and Winnick (1991), emphasizing the use of court procedures for therapeutic reasons rather than being merely adjudicative or punitive. These authors did not draw on this explanatory perspective to develop a drug court causal model to explain how impact was produced, nor test such a model, rather therapeutic jurisprudence was used to explain philosophical underpinnings of the helping-oriented, mostly nonadversarial drug court approach, contrasting it with normal court proceedings. In Nolan's striking critique, he portrays drug courts as the most recent example of therapeutic jurisprudence (to him not necessarily a positive development). Senjo and Leip tested what they believed was a drug court function that illustrated its therapeutic jurisprudential qualities, finding that defendants experiencing favorable interactions with judges fared better than those experiencing unfavorable interactions. The therapeutic jurisprudence discussions (favorable in Hora et al. 1999; negative in Nolan 2001) captured a flavor of the emphasis on treatment over adversarial procedure or punitive aims, but were not intended to help identify key underlying constructs, compatible as drug court proceedings may be with that perspective.

Due to the practice in some drug courts, of transacting status reviews openly in front of a full courtroom of participants, Miethe et al. 2000) treated the drug court as an opportunity to test what they saw as an example of Braithewaite's reintegrative shaming theory. For example, when a participant was berated by a judge for using drugs or missing treatment sessions, this

would occur in full view of other participants seated in the courtroom awaiting their appearance before the judge in the Clark County (Las Vegas) Drug Court and, together with the supportive elements of the drug court process, this was thought to lead to reduced recidivism. In testing whether this perspective explained favorable outcomes, Miethe, Lu and Reese did not find the predicted positive effect with findings that failed to support the theory.

Longmire et al. (2001) did not identify a theoretical perspective explaining the drug court effect, but did identify five dimensions characterizing drug courts intended to be directly measurable. (They did not test the influence these dimensions may have had using drug court data.) The five dimensions of drug courts included: (1) leverage over court participants, (2) population severity, (3) predictability of court response to participant behavior, (4) program intensity and (5) rehabilitation emphasis. The Longmire et al. five dimensions did not derive from a theoretical understanding of the drug court mechanism, but rather seemed to identify candidate constructs as a "mixed bag" of related explanatory perspectives that can be inferred as having to do with affecting drug court outcomes. Leverage may reflect a version of partially incapacitative functions (the restrictiveness of supervision and monitoring). Population severity may reflect the fact that different courts accept different categories of substance abusing defendants or offenders, a construct not tied to a theoretical explanation. Predictability may reflect a behaviorist or deterrent theme, for example, such as the impact of a particular method of using sanctions and rewards. Program intensity may have to do with the extent of involvement, attendance, and participation in various activities (treatment) required of drug court participants. This dimension can be seen as a court or programmatic attribute or, confusingly, as an outcome reflecting participant behavior. Rehabilitation emphasis appears be a characterization of the extent to which helping and facilitation of personal change is emphasized over threat of punishment in delivering services to participants. This dimension seems to be an attribute asking an observer to rate the extent to which treatment is featured, one supposes, over punitive interventions. Overall, some of these dimensions may be suggestive of constructs, even though they are not tied together theoretically or conceptually. One critical problem is that these dimensions do not necessarily distinguish a drug court from other kinds of treatment-related innovations, which one would think would be a critical requirement of a typology useful in suggesting drug court constructs.

Sponsored by the U.S. Department of Justice, Bureau of Justice Assistance, the drug court professional association (NADCP 1997) posited "key elements" of drug courts:

1. Drug courts integrate alcohol and other drug treatment services with justice system processing.
2. Using a nonadversarial approach, prosecution and defense counsel promote public safety while protecting participants.
3. Eligible participants are identified early and promptly placed in the Drug Court program.
4. Drug Courts provide access to a continuum of alcohol, drug, and other related treatment and rehabilitation services.
5. Abstinence is monitored by frequent alcohol and other drug testing.
6. A coordinated study governs drug court responses to participants' compliance.
7. Ongoing judicial interaction with each Drug Court participant is essential.
8. Monitoring and evaluation measure the achievement of program goals and gauge effectiveness.
9. Continuing interdisciplinary education promotes effective Drug Court planning implementation and operations.

10. Forging partnerships among Drug Courts, public agencies, and community-based organizations generates local support and enhances Drug Court effectiveness.

Most of these "key components" appear to represent descriptive themes, aims, or values, as opposed to presenting an overall theoretical perspective. However, by drawing main concepts out of the statements that are written in aspirational or "standards-like" language, several could be interpreted as suggestive of operations or measures possibly representative of constructs. Components #1 and # 2 suggest a new integration and method of justice processing, one characterized by a more blended incorporation of treatment services into processing using nonadversarial technique. Early eligibility in #3 might mean that immediate intervention is an effective construct likely to affect participant outcomes (e.g., those who enter the program immediately are more successful than those who enter later) or monitoring through drug testing might be representative of close supervision with consequence (as deterrence theory would suggest). This could be rather easily measurable. Ongoing interaction with judges (#7) certainly can be measured and tested in a number of ways (frequency, duration, substance, timing) and could be seen to reflect the judge's central role, again in as part of a possible deterrent scheme. Components 6, 9, and 10, though, would seem more difficult to tie directly to constructs that explain impact. Hiller et al. (2009) in a very recent, as yet unpublished article, attempt to translate the drug court professional organization's credo-like key components into measurable operations.

In several experimental studies, Marlowe and various colleagues (Marlowe and Kirby 1999; Marlowe et al. 2003a, 2005, 2006) have employed what Marlowe has described[5] as a behaviorist perspective (though one that could also be seen as deterrence based), focusing on drug court impact (participant outcomes) as a function of the impact of sanctions and positive rewards, including the effect of varied schedules before the judge and various varied forms and schedules of sanctions and rewards.[6] Their conclusions suggest that manipulation of sanctions, including appearances before the judge, are instrumental in producing drug court outcomes, and that overuse of negative sanctions ultimately appears to have a negative effect on participant behavior. The Marlowe studies do point to the use of sanctions and the role of the judge as probably important drug court constructs and further provide some evidence relating to how variations in their use affect participant outcomes. Thus, Marlowe and associates evoke an overall theoretical perspective (behaviorist-deterrence oriented) that seems both intuitively sensible and supported by some of their findings.

Taken together, the work reviewed above offers themes that contribute to explaining some aspects of drug court operations and their impact on participant outcomes and, indirectly, contribute to the aim of identifying constructs and an underlying model of drug court impact.

BUILDING AND TESTING A DRUG COURT CAUSAL MODEL FROM MULTIPLE STUDIES FOR ADDRESSING CONSTRUCT VALIDITY

In identifying underlying drug court constructs for developing eventual tests of a causal model, explaining the widely advertised crime reduction impact of drug courts, one might

[5] Comments made in a presentation at the meetings of the World Criminology Congress, August 9, 2005.

[6] Rewards, such as lessening required tasks or paying financial rewards for compliance were effective; enhanced reward schedules were more effective than just lessening of court requirements of nonfinancial rewards.

have considered three basic methods. First, if the drug court were a well-established intervention, one could merely draw on the constructs already agreed upon in the literature and use them to guide causal models to be tested on data from multiple drug court sites. Second, one could posit a model based on a particular theoretical perspective, operationalize it using reasonable measures given available findings, and then test it on drug court data. And/or, third, one could begin with a grounded approach building on observation, interview and preliminary descriptive studies to formulate a reasonable causal model reflecting an hypothesized theoretical explanation of how it works and then test and adjust the model and its rationale, depending on what data subsequently suggest. As there was little if any previous research in the drug court field when our research team first began, the first approach was, of course, not available to us. Several authors reviewed above (e.g., Nolan 2001; Miethe et al. 2000; and Marlowe and Kirby 1999) adopted theoretical perspectives and, in the case of Miethe and Marlowe, then sought to test selected elements of drug court operations to determine whether these elements acted as the theory would predict. Longmire et al. (2001) used a version of the third approach in identifying five dimensions proposed to represent constructs likely to central to producing drug court impact; however, they did not draw on a unifying theoretical perspective to explain their "dimensions."

Questions about what a drug court "is" first faced our research approach at the very beginning of the drug court movement, starting with the nation's first nationally funded evaluation of the nation's first drug court in Miami (Goldkamp and Weiland 1993). The goal of formulating a causal model was pursued in stages in successive evaluation studies of drug courts to understand and evaluate the impact and operation of drug courts through the 1990s (Goldkamp 1999). Our approach drew not only on observation of many of the courts developed during that decade but also, in a more focused way, on the author's own experience in evaluating the Miami, Philadelphia, Las Vegas, and Portland drug courts during the formative years of the drug court movement. The Miami, Las Vegas and Portland drug courts were among the first generation of drug courts – with the Miami court establishing the first example ever in 1989, then the Portland court following in 1991 and the Las Vegas becoming operational in 1993. The Philadelphia court, first operating in 1995, was a "second generation" (postfederal funding) court. The first courts relied heavily on their own creativity and their mission of problem-solving, including finding treatment resources and meeting costs, because there were no earlier examples to draw on. Later courts, such as Philadelphia's, differed in that by then they had many examples of courts from which to borrow and adapt and also in having federal funding available for planning, training and, in many cases, for their first years of operation.

Using observation and interview during the first half of the 1990s, accommodating the growing diversity of drug courts, the first task for the author and colleagues was to develop a working typology of drug courts (Goldkamp 1994a, 1999, 2000). The aim in developing the working typology of drug courts was, using a grounded approach, to draw on observations and interviews to provide a conceptual frame of reference, which identified key commonalties in courts (that were also essential ingredients) despite their variations. Once these classes of attributes describing drug courts were identified, they were considered as suggestive of underlying drug court constructs. Next, measures were adopted to serve as indicators of the constructs in formulating a drug court causal model. Using contemporaneous data from two sites (Portland and Las Vegas), the preliminary model was then tested empirically for confirmation that the candidate constructs actually played significant roles in producing drug court

outcomes. With this as a first step, then, ideally the model could be tested and further refined in subsequent and more specifically focused drug court studies.[7]

A REHABILITATION-DETERRENCE EXPLANATION

From observation, interview, and preliminary drug court studies, the preliminary causal models inferred that drug courts operated under a dual theoretical perspective, similar to the one reflected later in Marlowe et al.'s (2005, 2006) work. The proposed models were hypothesized (Goldkamp 2000; Goldkamp et al. 2001c) to operate based on rehabilitation (specific deterrence) and general deterrence. It was argued that rehabilitation, a long-standing justice aim particularly dominant during the first half of the twentieth century, alone did not fully capture the operations of the drug court. There were many aspects of the drug court that appeared clearly rehabilitative (as in their "let's-treat-them-rather-than-just-punish-and-recycle them" orientations) (see Nolan 2001). Although not viewed as sufficient as a total overall guiding explanation for the drug court model, rehabilitation explained much of the language and emphasis on traditional forms of treatment characteristic in drug courts. Observation and interview suggested, however, that the drug court could not simply be explained as a sort of rehabilitation redux, the treatment ethic long dormant, but now reemerging. Moreover, in addition to the features seemingly compatible with a rehabilitation framework, other aspects of drug courts were not well accounted for by this perspective, including the increasingly complex use of sanctions and jailing. While some might debate that rehabilitation includes specific deterrence and that a reading of Bentham (1781, reprint ed., 1988) would show elaborate use of sanctions and rewards; in a noticeable sense, the treatment emphasis in observed drug courts was carefully circumscribed by more traditional criminal justice boundaries, on the other side of which more punitive aims were still in the waiting. The court brought the coercive powers of punishment strongly to bear on the rehabilitative practices that were otherwise evident.

General deterrence complemented specific deterrence functions, as individual transactions in the drug court were used for dual purposes: first to instruct the individual him/herself in the process of self-change (specific), and, second, as a public lesson for other drug court participants advertising consequences that lay in wait when noncompliance occurred (general). Individual treatment was greatly supplemented by group treatment. Individual level actions (favorable and unfavorable to treatment progress) were advertised publicly in court. A defendant who missed treatment or used drugs would be addressed loudly and publicly in front of all the other participants seated in the courtroom awaiting their own turns to face the judge. When the judge heralded a participant's success, this also was absorbed by the audience, providing examples of how one should act to receive positive outcomes. When a participant transgressed, various sanctions would be imposed publicly, ranging from rather minor but embarrassing sanctions (sitting in the jurors box observing court for a few days) to rather severe sanctions (such as being sent back to earlier treatment phases, being sent to jail for a few days, or, worse being terminated from the program and sentenced to a punitive term). The use of jail as a sanction among the unconvicted participants in drug court seemed particularly deterrence-based and was widely perceived by participants as the most undesirable action a judge could take in response to their noncompliance. In contradiction to those who have argued that confinement coming at the end of an often long adjudicative process served

[7] As of this date, to the author's knowledge, this has not occurred in the available literature.

as a poor deterrent, drug court participants themselves reported that the immediate and unconstrained use of jail in the drug court communicated the threat of punishment quite effectively (Goldkamp et al. 2001a).

IDENTIFYING CONSTRUCTS USING A WORKING TYPOLOGY

The drug court working typology was structured in two parts, the first characterized the drug court on a general level to help distinguish drug courts from other more traditional court proceedings, and the second outlined seven more specific dimensions that were descriptive and pointed to essential elements of drug courts that posited underlying constructs (Goldkamp 1994b, 1999).

Part one of the typology identified three core attributes that characterized drug courts in broad terms, including: (1) a new substantive focus on treatment with goals, values, and methods that are non-traditional for the criminal court; (2) a new judicial role and new related roles for other players; and (3) a newly defined working relationship between treatment and criminal courts (and between drug court and other social services), basically rejecting the "refer out through probation" hands-off judicial approach.

The second and more substantively specific part of the typology identified seven dimensions, which courts shared in common but along which they varied:

1. *Target problem*: Each drug court was created in response to a particular local drug-crime problem. In more general terms, this dimension recognized that the context within which courts operated was key in understanding their impact. Drug courts differed, sometimes dramatically, in the nature of the drug-crime problem, motivating the development of a drug court in a jurisdiction. While all jurisdictions shared in common a major drug-crime orientation, the nature of that problem differed from site to site as did the particular part of that overall problem that the drug court approach was intended to address. Depending on the site and its local drug-crime issues, drug court planning, for example, may have been spurred in response drug-related property crimes, prostitution, drug-related homelessness, drug gang violence, perhaps the effects of a recent heroin epidemic, or other aspects of a drug-crime problem affecting a specific geographic area of the drug court jurisdiction.
2. *Target population*: Having determined that a certain slice of the drug-crime problem was the main issue to be addressed by a drug court, each drug court next translated this problem orientation into a decision to deal with a certain part of the entering criminal justice population that would be its specific and accessible target most closely related to the problem. Not only could a given court consider a variety of target populations that might help address the local drug-crime problem, but target populations also differed considerably from court to court, as the drug court approach grew. Some courts dealt with a mixed array of substance abusing criminally charged defendants, while others selected first time marijuana users or mainly heroin abusers. Some limited their scope to a felony population, believing that the greatest crime reduction impact could be achieved by addressing the more seriously involved highest risk participants, while others chose to deal with high-volume categories of misdemeanor substance abusers. The targeted populations might further have been limited by the stage of processing at which a drug court was designed to operate and the agreement of key justice actors on what they thought was appropriate. The research also suggested that in focusing on certain target populations, the drug court was implicitly also dealing with the settings

from which the target population came – and these were often specific, identifiable parts of town.

3. *Court processing focus and adaptations*: Drug courts varied dramatically in how they fit into the existing criminal process. Some intervened from the very first postarrest stage of criminal process, while others focused at postplea or postconviction, or the sentencing stages. Reentry drug courts, for example, dealt with the release-from-confinement stage. In addition, drug courts created new review stages, proceedings, status hearings, intake procedures, and nonadversarial methodologies. Some courts created an "orientation" stage at which all potentially eligible defendants were required to attend in advance of normal court proceedings (even before first appearance). These varied notably by setting.
4. *Identifying, screening, and evaluating candidates*: Courts differed in the kinds of methods employed to identify and enroll candidates for the drug court, ranging from the use of rough and readily available indicators such as criminal charge, prior criminal and substance abuse history criteria that would allow quick sorting of candidates from each batch of new arrestees to more extensive and time-consuming substance abuse treatment evaluation procedures borrowed from traditional drug treatment programs that would require identifying candidates more slowly as their cases advanced into the normal adjudication process. In some cases, nearly immediate screening and enrollment occurred, while other courts followed the original Miami idea that arrest is an optimal point for intervention (when the substance abuser reaches "rock bottom" and is most open to being helped), while other courts did not consider a candidate until the sentencing stage, potentially many months after arrest and many other criminal processing stages.
5. *Structure and content of treatment*: Drug courts differed considerably in what they employed as "treatment." Treatment may include a variety of procedures, from detoxification to outpatient and residential treatment. Others have blended court appearances, judicial intervention, and interaction with treatment of different types, such as various degrees of drug testing and treatment or group session attendance. Drug testing, acupuncture, and other activities have been adapted to the drug court treatment regimen. Drug courts varied in the nature, substance, and frequency of treatment as well. They also differed in the extent to which they adopted procedures borrowed directly from traditional behavioral healthcare practices or improvised and adapted court-based procedures (involving court appearances, judicial interaction, rewards, and sanctions), with selected traditional treatment practices. After an initial pilot, for example, the Miami court dropped traditional practices built on residential treatment and exclusionary procedures followed by private providers to instead design its own special treatment regimen emphasizing outpatient treatment and acupuncture in its own clinics.
6. *Responses to performance: client accountability:* Many courts have organized treatment into successive stages through which participants must progress and which employ various schedules of rewards and sanctions. In fact, the judge's announcement of a participant's advancement from one stage to the next or return to an earlier stage of treatment is conceived of as a response to a participant's positive or negative performance in the drug court. Rewards and sanctions include a wide variety of measures in different courts, including not only promotion to the next stage of treatment, but also being berated or congratulated by the judge in front of the full courtroom, being made to sit in the jury box to observe proceedings for successive sessions, writing and

reading essays to the court on self-improvement, or, in a worst case, being ordered to jail for short periods of reassessment.

7. *Extent of system support and participation*: Another key element of the drug court typology on which courts differed reflects the internal (court or justice system) or external context (other social services, laws, crime picture) surrounding the operation of the drug court. This dimension presents a wide range of possible measures that could get at this dimension, reflecting a variety of aspects. For example, internally, the large court systems viewed and supported drug courts very differently – and this has changed over time. In some courts, the drug court was permitted as the special interest of one particular judge who supervised the court in his or her own time on a part-time basis and after normal judicial duties were accomplished. Other systems rotated judges as part of normal criminal assignments. Still other systems integrated judicial drug court duties into the larger court system in a municipality or even state-wide, in effect institutionalizing the drug court as a "normal" part of the court system.

Externally, drug courts also varied in the extent to which other justice agencies participated, supported or merely "put up with" the drug court. Often the prosecutor played a central role in determining the ultimate scope and power of the drug court. In some jurisdictions, like Miami and Portland, the prosecutor was a major force behind the drug court. In others, the prosecutor supported only very narrow and restricted versions of drug court by restricting the eligibility criteria of potential candidates they would accept (e.g., when participants had pleaded guilty or even been sentenced). Courts also differed in the legal contexts within which they operated (different kinds of drug laws, for example) and in the extent to which other social service systems cooperated or played central or partnership roles in providing services.

TESTING OPERATIONAL MEASURES OF CONSTRUCTS

The ultimate way this body of research could be applied to the problem of addressing construct validity in drug court research was to construct a conceptual model showing how key elements of the drug court innovation could produce its crime reduction impact. As a point of departure, Fig. 22.1 represents a general conceptual scheme positing that the generation of positive outcomes (e.g., treatment success, less reoffending, less absconding, less termination, lowered

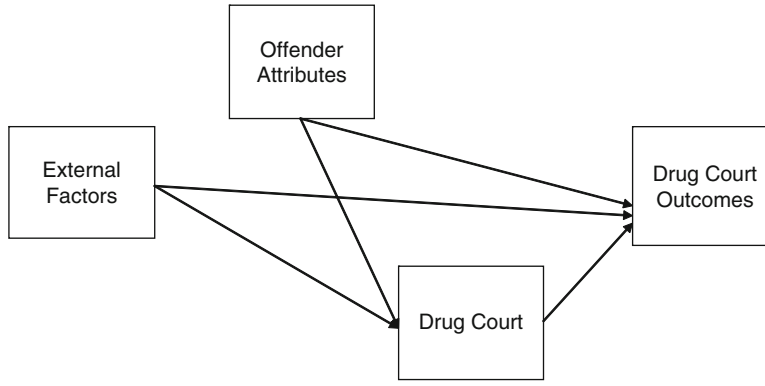

FIGURE 22.1. Drug court causal model: underlying constructs producing outcomes.

costs, etc.) were affected by: (1) external factors representing the immediate and larger context of the drug court's operation (e.g., laws and policies, administrative practices, the geography of treatment and crime), (2) participant attributes (e.g., a priori risk, drug habits, treatment history, etc.), and (3) elements of the drug court itself (judge behavior, appearance in drug court, social interactions with peers, treatment, sanctions, etc.). According to this conceptualization of a drug court causal model, the drug court produces its outcomes (of which public safety is given the greatest emphasis) only after taking into account the direct, indirect, and/or mediating effects of external factors and participant attributes. These are included in the conceptual model not only in the sense of "controls," but also because no drug court operates in a vacuum and their contexts are not only influential, but they are likely to differ considerably.

At this preliminary stage of model formation, the next step was to select and test operational measures of the concepts represented in the model (both external and internal to the courts themselves) using data generated in the national evaluation of the drug courts in Las Vegas and Portland (Goldkamp et al. 2000, 2001b). As a means of testing, the plausibility of the constructs represented in the conceptual model, the research examined: (1) the possible importance of contextual factors (external and internal to the courts) in shaping drug court participant outcomes using interrupted time series analysis and (2) the contributing roles of drug court functions, to the extent we had reasonable measures of them, in separate individual-level analyses. (External influences examined using time series included enactment of state laws affecting drug penalties, state laws affecting eligibility and costs of behavioral health care, jail crowding litigation and emergency releases, changes in court and prosecutorial policy relating to drug court (see Goldkamp et al. 2001d). Other contextual measures, geography of neighborhoods and clinics (represented as distance measures), and different judicial assignment approaches, were tested in individual level analyses. Tests of the more obvious candidate drug court elements (treatment, appearances in court, sanctions) were examined using logistic regression with controls for offender risk attributes (see Goldkamp et al. 2001c).

Times series analyses underscored the importance of external factors in affecting the function of drug courts over time, as measured by orientations of candidates and enrollments over time in Portland (1991–1997) and Las Vegas (1993–1997). Court and prosecutorial policies had major impacts on the courts in both sites, respectively. In Portland in 1995, a new much less tolerant, punitive approach to noncompliance was adopted, resulting in more court failures. In Las Vegas at roughly the same time, a new prosecutor implemented a policy that nearly ended use of drug court at the preconviction stage and implemented instead an approach aimed at the postconviction, sentencing stage, which had an important effect on court function and outcomes. Other factors such as changes in law (lowering penalties for drugs in Nevada, affecting behavioral health care eligibility in Oregon), and jail crowding interventions as well as other external factors also had an effect (Goldkamp et al. 2001d). Geography appeared to be important (statistically significant) in producing outcomes in both sites, net of controls, but in marginal ways, when measured as distance from residential neighborhoods (for non-whites) to drug court or treatment clinic site. Judicial assignment, which was testable only in Portland where various approaches to drug court assignment was attempted, had a statistically significant, nonmarginal but complex effect on drug court participant outcomes (Goldkamp et al. 2001b, 2001c).

Having established evidence of the potential importance of contextual factors in affecting drug court outcomes through time series, the analysis of factors representing drug court constructs turned to individual level analysis of the relative contributions of drug court elements on participant outcomes using the Portland and Las Vegas drug court data summarized in Table 22.1. Surviving until the final stages of multivariate analyses were measures of judge

TABLE 22.1. Modeling the effects of drug court treatment variables on later offender behavior (rearrest within 1 year; graduation within 2 years) among drug court participants in Multnomah county (1991–1997) and Clark county (1993–1997)

Multnomah county					Clark county				
	Any rearrest	Drug rearrest	Non-drug rearrest	Graduation w/in 2 years		Any rearrest	Drug rearrest	Non-drug rearrest	Graduation w/in 2 years
Risk variables					*Risk variables*				
Race (white/non-white)	0.324 (0.138)	0.706 (0.002)	0.113 (0.622)	−0.428	Prior arrests in last 3 years	0.7278 (0.0087)	0.7517 (0.0200)	0.7310 (0.0084)	0.2026 (0.5743)
Alias	−0.943 (0.000)	−0.784 (0.001)	−0.527 (0.018)	0.145 (0.553)	Prior drug arrests	0.6276 (0.0227)	0.3129 (0.2745)	0.6080 (0.0211)	−0.3627
Prior arrest in last 3 years	0.603 (.007)	−0.022 (0.929)	1.075 (0.000)	−0.078 (0.790)	Prior FTAs	0.0758 (0.7767)	0.5395 (0.0508)	−0.0656 (0.7979)	−0.4406 (0.1986)
Pending arrest charge	0.164 (0.652)	0.194 (0.589)	0.221 (0.523)	−0.856					
Treatment/sanction variables					*Treatment/sanction variables*				
Time in TX (<50%, 50% or more)	−0.209 (0.515)	−0.286 (0.411)	0.032 (0.927)	1.187 (0.002)	Time in TX (<50%, 50% or more)	−0.4122(0.2928)	−0.9256 (0.0171)	−0.2850 (0.4477)	3.2540 (0.0020)
No. of TX contacts (30 or less, 30>)	−0.248 (0.429)	−0.012 (0.973)	−0.543 (0.100)	0.491 (.242)	No. of TX contacts (30 or less, 30>)	−1.1790 (0.0078)	−0.2304 (0.5652)	−0.9692 (0.0189)	0.4461 (0.7647)
Any sanctions	0.637 (0.203)	0.449 (0.524)	0.894 (0.101)	−0.937 (0.048)	Any sanctions	1.2867 (0.0000)	0.9898 (0.0131)	0.8947 (0.0036)	−1.5957 (0.0000)
Any jail sanctions	1.026 (0.025)	1.430 (0.024)	0.491 (0.315)	−0.476 (0.298)	Any jail sanctions	0.7029 (0.0059)	0.4279 (0.0955)	0.4830 (0.0445)	−1.4584 (0.0000)
No. of court appearances (8 or less, 8>)	−0.147 (0.588)	0.345 (0.239)	−0.138 (0.618)	3.515 (0.001)	No. of court appearances (8 or less, 8>)	1.0547 (0.0096)	0.4866 (0.1703)	1.0288 (0.0049)	2.0081 (0.0318)

(continued)

TABLE 22.1. (continued)

Multnomah county					Clark county				
	Any rearrest	Drug rearrest	Non-drug rearrest	Graduation w/in 2 years		Any rearrest	Drug rearrest	Non-drug rearrest	Graduation w/in 2 years
Model statistics					*Model statistics*				
Log likelihood	148.59	488.071	526.122	363.299	Log likelihood	451.972	404.029	476.109	291.912
Goodness of fit	4.405	3.945	3.089	7.107	Goodness of fit (H&L)	18.4032	9.7041	4.7604	8.8744
GF significance	0.819	0.786	0.929	0.525	GF significance	0.0184	0.2864	0.7828	0.3530
Chi square	148.59	92.539	108.574	183.421	Chi square	110.714	70.963	75.663	220.978
DF	9	9	9	9	DF	8	8	8	8
Significance	0.000	0.000	0.000	0.000	Significance	0.0000	0.0000	0.0000	0.0000
N	547	547	547	405[a]	*N*	407	407	407	407

Note: These analyses are based on unweighted data. Parameter estimates and significance are indicated from logistic regression analysis
Source: Goldkamp et al. (2001c)
[a]Includes 1991–1996 defendants only in Multnomah County

(number of court appearances), treatment (time in treatment, number of treatment contacts), and use of sanctions (any sanctions, jailing).[8] The finding that the factors that surfaced as statistically significant, net of the effects of controls, differed in the two sites (i.e., by location) and by time period underscored the importance of this kind of exploratory analysis searching for underlying constructs. In Portland in final analyses of potential indicators reflecting key constructs, only use of jail as a sanction appeared to be related to reoffending when the outcome was measured as any rearrests or as drug rearrests within 2 years of drug court entry. However, the use of jailing *increased* the participants' chances of reoffending, net of controls. Other key measures relating to court, judge, and treatment functions were not found to be related to explaining reoffending outcomes in the Portland drug court data. In the Las Vegas drug court data, more of the assumed key elements were significantly (statistically and meaningfully) related to reoffending outcomes; however, court appearances, the use of sanctions, and the use of jail as a sanction each *increased* the prospects of participant reoffending during the follow-up period rather than decrease the chances as the model would have predicted. Yet, the number of court contacts and length of time in treatment were related to reoffending in the expected direction, i.e., the more contacts and the longer in treatment, the lower the probability of reoffending.

When the measures representing possible underlying constructs were used to predict programmatic outcomes (successful graduation from drug court), the findings differed from the analysis of reoffending. In Portland, net of controls, increasing time in treatment, and greater number of court appearances were related to graduating successfully from the drug court, thus supporting the predicted relationship. The use of any sanctions was related in the sense that having sanctions applied was related to failure to graduate. The Las Vegas results were very similar.

These findings raised several questions about the nature of underlying constructs and what a reasonable first approximation of the drug court causal model should include. First, contextual factors, both "external" and internal to the court system, itself seemed to play important roles in influencing court functioning (and, to the extent that court functioning affected participants outcomes, these contextual factors influenced the drug courts' productivity). The impact of contextual factors and the finding of differences across jurisdictions demonstrate both their importance in modeling drug court impact and the difficulty that would result in attempting to interpret analyses of drug court outcomes without taking these context measures into account (which no other studies have). The individual-level findings also pose challenges for identifying the drug court's underlying constructs, especially when considering the replication of drug courts across the nation. The key factors – representing treatment, the judge/court role, jailing, and sanctions in general – seemed to predict program outcomes (i.e., graduation vs. termination) better than public safety outcomes. What it takes to predict program graduation is quite different from what it takes to predict (or to prevent) reoffending. This finding throws into question the crime reduction effectiveness of what are assumed to be the key elements of the drug court innovation. Because the drug court program was designed to reduce offending, one would expect the factors shaping participants' progress through the program to graduation to correspond to factors related to prevention of reoffending. One would also expect such factors to be representative of the constructs underlying by the drug court approach.

[8] Interactions between court, treatment and jailing were also tested but not presented here. Some statistically significant results were found. See Goldkamp et al. (2001c).

Not only did the indicators showing significant and meaningful relationships with the probability of reoffending differ by site (in two of the nation's most recognized drug courts), but, moreover, interpretation of the nature of their relationships was not self-evident. The fact that the use of jail appeared to be the only significant indicator of reoffending in Portland might suggest that the Portland drug court mainly achieved its results by coercively brandishing the use of jail. One might infer that the Portland approach was primarily deterrence-driven in the most punitive sense. In fact, however, our observation of that court in comparison with the many other courts we observed at the time led us to conclude that the Portland court was distinguished by the fact that it used jailing less frequently than most other courts. Without digressing at too great a length here, possibly the role of jailing was found to be influential because of its highly selective rather than common application.[9]

In Las Vegas, the number of court appearances (one of the measures used to tap the construct involving the judicial role in drug court) was significant in predicting reoffending, but in a positive direction: that is, the greater the number of appearances a participant made in court, the higher the probability of reoffending, net of the effects of participant risk. This finding would call into question one of the drug court movement's key assumptions that frequent appearances before the judge is an important vehicle in reducing reoffending. According to the Las Vegas results, either frequent court appearances contributed to reoffending or mainly served as an indicator of outcome mirroring reoffending (that is, people who were rearrested were also likely to be people who were in court frequently). The positive relation between any sanction use (including jailing) and reoffending in Las Vegas, net of risk, raises another dilemma for the conventional wisdom of drug court practitioners: On the one hand, yes, the use of sanctions played an important role in producing reoffending outcomes; but, on the other hand, they apparently increased the prospects of reoffending as more jailing led to, greater prospects of reoffending. Or, again, perhaps their application should be viewed more as an outcome (a dependent variable) itself. Persons who were sanctioned also were people who were rearrested during follow-up.

From any perspective, these findings are troublesome for the drug court assumptions that appearances and jailing are important deterrent vehicles in preventing later reoffending. The problem concerning the direction of the sanctioning relationships with reoffending outcomes could even lead to an interpretation that the drug courts mainly applied punishments to drug offenders who were likely to reoffend in the end anyway. Extended further, these findings may lead to questions about whether the sanction-oriented innovation is delivering punishment that otherwise might not have been applied in some of the participants' cases – in other words, not serving as an alternative to normal punishment as advertised. These admittedly preliminary or exploratory steps to develop a drug court causal model reflecting the constructs underlying the drug court idea and operation do not necessarily support the conventional wisdom concerning drug court impact. Constructing models of drug court impact is both more complex (involving multiple aspects) and variable over time and site than conventional wisdom has assumed.

WHAT DRUG COURT CONSTRUCT VALIDITY PROBLEM?

> Good construct explication is essential to construct validity. (Shadish et al. 2002:69)

[9] Bentham's (1781) discussion of deterrence emphasizes that the deterrent impact of a sanction is enhanced by its very selective application and that overuse weakens its effect.

The logical method illustrated in this research, from the steps of observation, interview, consideration of theoretical rationale, to typology development and empirical testing, has not resulted in identification of a clearly supported set of constructs that either comport with the conventional wisdom or with other explanations of the drug court effect. Oddly, the obvious drug court functions explained participant success in the drug court program (i.e., in reaching "graduation") much better than they accounted for the probability of reoffending. This can be taken to mean that practitioners are reasonably consistent in applying several basic themes to shape the drug court's programmatic operation (concerning judge, court appearance, treatment, sanctions, jailing), but that the factors governing programmatic operation do not clearly relate to crime reduction. The search for an underlying model is made further difficult by the finding that the factors surviving controls varied by site (and within site by time period, though time-specific findings are not discussed here).

Based on this body of research, then, how do the findings regarding underlying constructs raise issues of construct validity? The first implication is a negative: how can we be assured that the drugs courts, which have been studied for impact, are consistent in approach (i.e., are based on a reasonably similar drug court "engine"), despite diversity in certain areas (structure, target populations, treatment content)? It follows then that, despite widespread replication of the drug court modality, it is uncertain whether the operation and impact of drug courts are explained by the same underlying mechanism – or even if some of the underlying constructs (e.g., sanctions) might operate in a manner opposite to that assumed.

Many issues of construct validity can be raised when the underlying constructs are uncertain. This problems falls under what Shadish et al. (2002:73) classify as "inadequate explication of constructs." It is not surprising that an innovation that became so rapidly popular proceeded without much empirical verification of its assumptions; in fact, it is probably normal. But the great number of drug court outcome studies that support the notion that drug courts are effective crime reduction tools, "movement" enthusiasm aside, should at least be considered with some caution. In short, not only are the studies based on widely different examples of the innovation, with different target populations and procedures and occurring in different settings, but the body of supportive outcome studies to date also implicitly assumes that the operation of certain underlying constructs explains the results. A reading of the findings from the author's research journey discussed above suggests that this may not be a sound assumption.

Shadish et al. also discuss "construct confounding" as an example of a construct validity problem. The assumption of an implicitly or explicitly accepted drug court "model" and the related evaluation research may also suffer from confounding the notions of treatment, sanctions, jail, and judicial supervision. Interviews by the author over the decade showed that all of these were rationalized as "treatment." In fact, frequent court attendance, jailing, and other sanctions may be perceived as or may operate as punishments, or as threats of punishment, and had the opposite than intended effect on participants in the area of reoffending.[10] Confounding levels of constructs may also pose a challenge for construct validity in testing the impact of drug courts on crime. An example might be that, while participants are assumed to be "substance abusers." However, their drug problems could differ a great deal: some could have alcohol problems, be recreational marijuana users, or be highly addicted to methamphetamine or heroin; others could suffer from serious undiagnosed mental health problems

[10] The confounding of constructs parallels the conceptual difficulty, for example, already existing in distinguishing between specific deterrence and rehabilitation, with the Sechrest et al. (1979) seeing the distinction hinging on the use of fear or intimidation (not in rehabilitation but implicitly in specific deterrence).

in addition to their drug addiction. Thus, an important differentiator in outcome may be participant risk. Usually, though, drug courts put all new comers through a program with similar behavioral requirements for graduation, despite important differences. To the extent that addiction may be an underlying construct (or if addiction is related to participant risk), failure to account for levels or qualitative differences in addiction/risk raises problems of construct validity in looking at the body of findings from studies showing drug court impact on crime.

CONCLUSION: IMPLICATIONS OF CONSTRUCT EXPLICATION, CONSTRUCT VALIDITY FOR THE INTERPRETATION OF EVALUATIVE FINDINGS

This chapter has selected the extraordinary growth of drug courts and its associated evaluative literature to illustrate a facet of construct validity issues that is undoubtedly relevant to many other studies of policy relevant innovations. The dramatic growth of the drug court movement and the supportive evaluative literature serve as illustrations of how these issues in construct validity – in this case focusing on explication or identification of clear theoretical and operational understanding of "what a drug court is" – could have a potentially major impact, as implementation of policy innovation quickly outpaces the soundness of findings emerging in the trailing evaluative research.

At various levels of depth, rigor, and quality, evaluations of drug court impact have followed the innovation since its early days. Plenty of evidence from this rapidly growing body of evaluative literature prove that "drug courts work." This literature has been seen as useful to the drug court movement and government funders in supporting the institutionalization of the now highly transformed innovation. Once the premise that "drug courts work" is accepted as conventional wisdom based on the collective weight of the evidence, then the problems of identifying and considering the implications of underlying causal constructs can somehow now seem unnecessary, self-evident or merely academic. One could argue, to the contrary, however, that this absence in the growing body of drug court studies, the failure to examine and sort through problems of underlying constructs and construct validity, takes on increasing importance, given that the magnitude of the adoption or emulation of the drug court innovation.

Admittedly the lessons drawn from this author's research experience examining the development of drug courts are best understood as preliminary or exploratory and are discussed here for the purposes of issue-raising. This chapter has described a logical method – or at least a sequence or collection of steps – for moving research beyond the "whether it works" question to scrutiny of "how" it works. The result of raising these construct questions, however, is unsettling. Perhaps the most unsettling implication of this analysis is that the supportive body of findings from evaluative drug court studies is to such an extent based on "apples and oranges," on different studies of different programs in different settings with different populations in different time periods (etc.), that a reasonable case can be made that findings are, on the whole, not comparable. Add to that uncertainty about which particular core causative factors are essential to a drug court and the confidence with which one can generalize about their crime reduction capacity diminishes. The drug court "impact machine" is: (1) dependent on context, (2) participant attributes (risk), and (3) aspects of what drug courts do – some of which appears to generate an effect opposite to the one presumed and widely heralded.

The fact that widespread replication has proceeded without a solid empirical understanding of the elements of the court-based justice reform is not surprising from many perspectives. Perhaps it is commonplace among innovations in any field. However, without a grasp of the underlying constructs, the validity of the replications and the research that has followed them can be called into question – or at least the sweeping inferences drawn from the research can. In the health field, one may assume that a new vaccine being introduced involves the same amount of the same substance in whatever settings it is applied. In the area of social problems and social justice, certainly, innovations are not exact and cannot applied or reapplied in a manner that is exactly the same across settings. Even so, if the supportive evaluation literature and the grand claims of substance abuse and crime reduction are not supported by a literature based on studies that have systematically examined the innovation and its impact, one could conclude that these claims require further and more careful scrutiny – contrary to the popular view.

That the value of impact studies is greatly heightened by a specific understanding of the constructs and mechanisms at work, that is, by reference to a common understanding of the elements of the "impact machine," should be obvious. First, an agreed upon model allows the research to examine overall impact as well as contributions of specific elements. Using the drug court example, "When a drug court works, why does it work?" is closely mirrored by – but is not the same as – the question, "When a drug court doesn't work, why doesn't it work?"

Second, making sense of impact findings (positive or negative) is difficult to do meaningfully without a frame of reference, without an understanding of what is being measured. Replication – the validation of findings through the repetition of studies of the innovation across different settings – does not necessarily cure this problem. Repeating an apples and oranges approach may add to the number of positive findings on which policymakers draw as showing evidence of the innovation's success, but it does not necessarily contribute to the knowledge of the innovation's impact.

Perhaps, most critically, if the aims of the innovation involve crime prevention, or improved public and personal health, then public policy has an interest in being guided by knowledge of how to adjust or improve the particular strategy. With an agreed upon underlying model of the innovation's operation and impact, research can test the innovation's impact on specific populations or the relative roles of different elements in affecting particular outcomes or particular outcomes on specific populations. Replication can be valuable in taking into account the innovation's underlying mechanism while varying elements, population, and settings, and, thus helping to building an increasingly informative general and specific body of evidence of its effects.

The discussion presented in this chapter underscores the potential importance and of one often neglected aspect of construct validity – explication of a construct or, put another way, a clear understanding of the nature of the innovation under study. The context of this discussion is informed by the attempt of the author and his colleagues to understand the nature and impact of the drug court innovation from the inside-out, as it was unfolding, growing, shape-changing, and transforming into one of the most dramatic justice innovations in its scope in recent memory. The discussion was framed not only to use the drug court innovation as an example of the challenges faced by research attempting to evaluate a new social policy phenomenon with possibly majors implications. In addition, it sought to illustrate how, in addition to responding to evidence of the impact of a rapidly unfolding policy innovation, the paper aimed to underscore the foundational importance of the need in evaluative research to know what the "it" this is. The decade long research approach sought to contribute "immediate"

evidence of the impact of the drug court innovation, at times clamored for by government officials and funders, while at the same time developing a model or framework that contributed a firm grounding in what the innovation really involved. The effort to identify the underlying constructs drew on observation, interview, exploratory research, development of a typology and, finally, development of an empirically testable drug court causal model and, ultimately, called into question assumptions made by advocates that undergirded informing the drug court mythology.

With successful (favorable) results to report, why should the research community care about these abstract notions of construct explication and construct validity? Ignoring questions of identifying underlying constructs and of construct validity as studies accumulate may not necessarily be a fatal flaw, at least at first. It may be common, in fact, first to look for an effect and then, if one is indeed found, to try to explain the effect produced through careful causal model testing in a next phase of research. One could argue, for example, that it is not productive to test for underlying causal constructs and to worry about issues of construct validity when no effect is found. Given the belief among drug court practitioners that drug court practices are strongly validated by research findings, a poor job of addressing construct concerns "up front" can contribute to a stampede to adopt new practices that may, under closer scrutiny, not deliver on widely advertised promises – with implications for public safety, resource allocation and the nature of justice produced.

REFERENCES

Belenko S (1998) Research on drug courts: a critical review. Natl Drug Court Inst Rev 1(1):1–42

Belenko S (1999) Research on drug courts: a critical review, 1999 update. Natl Drug Court Inst Rev 2(2):1–58

Belenko S (2001) Research on drug courts: a critical review: 2001 update. National Center on Addiction and Substance Abuse, Columbia University, New York

Bentham J (1781, reprint ed. 1988) The principles of morals and legislation. Prometheus Books, New York

Cissner A, Rempel M (2005) The state of drug court research: moving beyond. "Do they work?" Center for Court Innovation, New York

Goldkamp J (1994a) Miami's treatment drug court for felony defendants: some implications of assessment findings. Prison J 73:(2), 110–166

Goldkamp J (1994b) Justice and treatment innovation: the drug court movement (a working paper of the First National Drug Court Conference). U.S. Department of Justice, Office of Justice Programs, National Institute of Justice, and State Justice Institute, Washington, DC

Goldkamp J (1999) When is a drug court not a drug court? In: Terry C (ed) The early drug courts: case studies in judicial innovation. Sage, Thousand Oaks, CA

Goldkamp J (2000) The drug court response: issues and implications for justice change. Albany Law Rev 63:923–961

Goldkamp J, Weiland D (1993) Assessing the impact of Dade County's felony drug court. National Institute of Justice, Washington, DC

Goldkamp J, White M, Robinson J (2000) Retrospective evaluation of two pioneering drug courts: phase I findings from Clark County, Nevada, and Multnomah County, Oregon. Crime and Justice Research Institute, Philadelphia

Goldkamp J, White M, Robinson J (2001a) An honest chance: findings from drug court participant focus groups in Brooklyn, Las Vegas, Miami, Portland, San Bernardino, and Seattle. Electronic Publication by the Office of Justice Programs (NCJ 193403). http://www. ncjrs.org/html/bja/honestchance/

Goldkamp J, White M, Robinson J (2001b) From whether to how drug courts work: retrospective evaluation of drug courts in Clark County (Las Vegas) and Multnomah County (Portland): Final Report. Crime and Justice Research Institute, Philadelphia

Goldkamp J, White M, Robinson J (2001c) Do drug courts work? Getting inside the drug court black box. J Drug Issues 31(1):27–72

Goldkamp J, White M, Robinson J (2001d) Context and change: the evolution of pioneering drug courts in Portland and Las Vegas (1991–1998). Law Policy 23(2):143–170

Gottfredson D, Exum M (2002) The Baltimore City Drug Court: one year results from a randomized study. J Res Crime Delinq 39(2):33–356

Gottfredson D, Najaka S, Kearly B (2003) Effectiveness of drug treatment courts: evidence from a randomized trial. Criminol Public Policy 2(2):171–196

Gottfredson DK, Najaka S, Rocha C (2005) The Baltimore City Drug Treatment Court: 3-year self-report outcome study. Eval Rev 29(1):42–64

Gottfredson D, Najaka S, Kearley B, Rocha C (2006) Long-term effects of participation in the Baltimore City drug treatment court: results from an experimental study. J Exp Criminol 2:67–98

Government Accountability Office (1995) Drug courts: information on a new approach to address drug-related crime: report to congressional committees. Government Accountability Office, Washington, DC

Government Accountability Office (1997) Drug courts: overview of growth, characteristics and results: report to congressional committees. Government Accountability Office, Washington, DC

Government Accountability Office (2005) Adult drug court: evidence indicates recidivism reductions and mixed results for other outcomes. Report to congressional committees. Government Accountability Office, Washington, DC

Hiller M, Belenko S, Saum C, Taxman F, Young D, Perdoni M (2009) A brief measure of drug court structure and operations: key components and beyond. Crime and Delinquency (in press)

Hora P, Schma W, Rosenthal J (1999) Therapeutic jurisprudence and the drug court movement: revolutionizing the criminal justice system's response to crime and drug abuse in America. Notre Dame Law Rev 74:439–538

Longshore D, Turner S, Wenzel S, Morral A, Harrell A, McBride D, Deschenes E, Iguchi M (2001) Drug courts: a conceptual framework. J Drug Issues 31:7–25

Marlowe D, Kirby K (1999) Effective use of sanctions in drug courts: lessons from behavioral research. Natl Inst Drug Courts Rev 2:1

Marlowe D, DeMatteo D, Festinger D (2003a) The role of judicial status hearings in drug court. Offender Subst Abuse Rep 3:33–46

Marlowe D, DeMatteo D, Festinger D, Schepise M, Hazzard J, Merrill J, Mulvaney F, McClellan T (2003b) Are judicial status hearings a key component of drug court? Crim Justice Behav 30:141–162

Marlowe D, Festinger D, Dugosh K, Lee P (2005) Are judicial status hearings a key component of drug court? Six and 12 month outcomes. Drug Alcohol Depend 79:145–155

Marlowe D, Festinger D, Lee P, Dugosh K, Benasutti K (2006) Matching judicial supervision to client' risk status in drug court. Crime Delinq 52(1):52–76

Miethe T, Lu H, Reese E (2000) Reintegrative shaming and recidivism risks in drug court: explanations for some unexpected findings. Crime Delinq 46(4):522–541

National Association of Drug Court Professionals (NADCP) (1997, reprinted in 2004) Defining drug courts: the key components. Bureau of Justice Assistance, United States Department of Justice, Washington, DC

Nolan J (2001) Reinventing justice: the American Drug Court Movement. Princeton University Press, Princeton, NJ

Sechrest L, White S, Brown E (eds) (1979) The rehabilitation of criminal offenders: problems and prospects. Panel of research on rehabilitative techniques. National Research Council: Washington, DC

Senjo S, Leip LA (2001) Testing therapeutic jurisprudence theory: an empirical assessment of the drug court process. Western Criminology Review 3(1)

Shadish W, Cook T, Campbell D (2002) Experimental and quasi-experimental designs for generalized causal inference. Houghton Mifflin Co, New York

Sherman L, Berk R (1984) The specific deterrent effects of arrest for domestic assault. Am Sociol Rev 49:261–272

Vilcica ER, Belenko S, Hiller M, Taxman F (2009) Exporting court innovation from the United States to continental Europe: compatibility between the drug court model and the inquisitorial justice system. International Journal of Comparative and Applied Criminal Justice. In press

Wexler DB, Winick BJ (1991) Therapeutic jurisprudence as a new approach to mental health law policy analysis and research. University of Miami Law Review 979

Wilson D, Mitchell O, Mackenzie D (2006) A systematic review of drug court effects on recidivism. J Exp Criminol 2(4):459–487