

DIFFERENTIATING DELINQUENT YOUTHS FOR PROGRAM PLANNING AND EVALUATION

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There is general agreement that delinquent youths are not all alike and, consequently, cannot be expected to respond to a given program in the same way. Program effects may be positive or negative, depending on person-program interactions. The aim of this article is to introduce a method for creating treatment-relevant typologies that can be continually developed and linked to outcomes within the context of an information system. To increase understanding of interactions between programs and client outcomes, a typology of clients was created based on 14 personality scales, using scores obtained at the point of program admission. This article reports on the methods used to construct the typology, the substance of the classification system, and the steps that are being taken to ensure its continued development. It also emphasizes the advantage to typology development of ongoing access to an information system that includes recidivism and other outcome data.

Classification of persons in juvenile justice is undertaken for at least one of four purposes: (a) to improve our understanding of criminal behavior (Frechette & LeBlanc, 1980; Harris, 1983; Henggeler, 1989; Huizinga, Esbensen, & Weiher, 1991; Jefferson & Johnson,

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1991; Jurkovic & Dodge, 1977; Megargee & Bohn, 1979; Warren, 1983; Warren & Hindelang, 1979; Wattenberg, 1979); (b) to improve the matching of offenders to interventions (Harris, 1988; Hunt & Hardt, 1965; Mezzich, Coffman, & Mezzich, 1991; Palmer, 1984, 1992; Sechrest, 1987; Van Voorhis, 1994; Warren, 1971, 1976); (c) to improve offender population management (Baird, 1986; Glaser, 1987; Quay, 1984); and (d) to improve prediction of behavior (Andrews et al., 1990; Brennan, 1987; D. M. Gottfredson, 1987; S. D. Gottfredson, 1987; MacKenzie, Posey, & Rapaport, 1988; Palmer, 1992; Warren, 1965). Classification often involves no more than specifying a level of repetitive offending or identification of an offender type, such as sex offender or drug abuser (Clements, 1996). Using such crude groupings, judges decide whether use of an institutional placement is needed or if a specialized treatment facility is appropriate.

Although sophisticated taxonomic research is rare, a few typologies have been developed that link clusters of offender characteristics prescriptively to intervention approaches. Megargee's classification system is based on the Minnesota Multiphasic Personality Inventory (MMPI); Megargee's system has had wide application in the Federal Bureau of Prisons and matches individual scores on the MMPI to 1 of 10 profiles found commonly among adult prisoners (Megargee & Bohn, 1979; Zager, 1988). Each profile is viewed as a personality type with distinct behavioral patterns and expected responses to different interventions. Other typologies are discussed subsequently in the section titled Current Typologies.

A sound treatment-oriented classification system goes beyond specifying types of persons and recommended interventions: It provides sufficient information about the types to facilitate explanations of delinquent behavior and of the responses of persons to interventions. Warren and Hindelang (1979), for example, argued that because of the complex pathways followed by individuals into patterns of delinquent behavior, no one explanation of delinquency seems sufficient. By giving structure to analyses of individual characteristics, we are able to develop clearer understandings of the dynamics of delinquency and use those understandings in the creation of relevant interventions.

From a broader perspective, structured complexity facilitates our decisions about individuals at every stage of the criminal and juvenile justice systems (D. M. Gottfredson, 1987). After all, most decisions involve prediction, and classification enables decisions to take into account patterned lessons from past experience. Classification summarizes and simplifies complex data, making these data more available for future decisions. In the case of matching offenders to treatment, classification structures data from past treatment experiences around the question "What works with whom under what circumstances?" (Palmer, 1992; Van Voorhis, 1997). By ignoring differences among treatment clients, important patterns of outcomes are missed, leaving policymakers with outcome results that are often too superficial for useful prediction.

The concept of differential treatment is not new, as can be seen in Warren (1971):

If one accepts the notion that offenders are different from each other in the reasons for their law violations, the implication follows that attempts to change the offender into a non-offender will vary in ways which are relevant to the case. Ideally, the goals of treatment will relate in some direct manner to the causes of the delinquency, and the treatment methods will relate specifically to the goals for various offender types. (p. 239)

Glaser (1973) also argued for this perspective, stating that he found considerable evidence

that programs which claim to change people usually: (a) do not change subsequent deviant behavior for most recipients . . . ; (b) change some clients beneficially; (c) are counterproductive (negative in effect) for still others. What we seek by evaluative research, therefore, is prescriptive guidance about what works best, in what respect, for what type of person. (p. 28)

More recently, Palmer (1992) and Andrews et al. (1990) have reiterated this view. Knowing what works and what does not work with different types of individuals under different circumstances continues to be the most critical focus of program evaluation in juvenile corrections and delinquency prevention. Unfortunately, most program

evaluations fail to differentiate among program clients, thus masking important differential outcomes (Palmer, 1984). Programs are judged to be effective or ineffective without taking into account patterns of positive and negative outcomes that underlie evaluation findings.

Program evaluation involves interpretation and prediction. On one hand, the evaluator needs to be able to provide feedback to a program, findings that speak to program design and implementation (Glaser, 1973; Palmer, 1992). Predictions are made regarding the likely effects of program changes. On the other hand, these data may be used predictively to assist the program and the placement authority in selecting clients who are most likely to benefit from the program, or at least avoid selecting clients who are unlikely to benefit and who may be harmed.

It is this interaction between program outcomes and placement decisions in juvenile corrections that structured the study reported in this article. Philadelphia stands alone as the only urban area that tracks program outcome information on every juvenile committed to any program anywhere. This includes community programs located in Philadelphia; secure institutions in other parts of Pennsylvania; and specialized programs as far away as Utah, Colorado, and Texas. Because detailed outcome measures are available on this entire population of cases, classification has played a critical role in the design of the evaluation system that is now shaping programs and the entire array of services available to family court. Program placement decisions and contractual arrangements with private providers are now being informed by data on intervention outcomes.

In this article, we describe the development of this typology; link the classifications to other classification systems; and discuss the application of the typology for program evaluation and development, the matching of youths to programs, and decisions regarding the need for new program resources. We emphasize the advantages of developing a typology within the context of a permanent outcome-based information system and discuss steps that need to be taken to further develop our understanding of the types of persons we have identified.

CLASSIFICATION FOR TREATMENT

Recent discussions of classification have underscored the lessons learned from three decades of treatment-relevant typologies (Clements, 1996; MacKenzie et al., 1988; Sechrest, 1987; Van Voorhis, 1997). Although there is widespread agreement that classification can improve the overall effectiveness of interventions, little development in this area has occurred in the past two decades. Risk assessment captured the imaginations of correctional and probation administrators in the late 1970s because of its management implications and appeared to preempt development of treatment classification (Jones, 1996; Van Voorhis, 1994). At the same time, doubts about psychologically based classification and problems with implementation further slowed development (Van Voorhis, 1994).

Criticisms have been leveled at several typologies for lack of efficiency and racial bias. Warren's (1971) I-Level, in particular, required of trained interviewers at least an hour of interviewing time per case, in addition to the other data collection the agency might require (Harris, 1988). Additional criticisms included the inequitable assignment of types to different racial groups and the subjective nature of the more clinical systems (MacKenzie et al., 1988; Sechrest, 1987). Implementation problems with several of the typologies presented potential users with concerns that hindered diffusion (Harris, 1988; MacKenzie et al., 1988). Lengthy clinical interviews and psychiatric jargon introduced cost and training issues that discouraged even the most interested agencies. With the advent of the Jesness (1988) Inventory as a paper-and-pencil method of arriving at I-Level types and the MMPI-based system, preferences have increased for objective, standardized measures with known levels of validity and reliability.

Recent discussions of classification highlight an interaction among three functions of classification: risk, needs, and responsivity to specific treatment approaches. Van Voorhis, Cullen, and Applegate (1995), summarized this literature:

1. High-risk offenders are more likely to benefit from intensive treatment programs, whereas low-risk offenders are more likely to be harmed by these programs.

2. Targeting criminogenic needs (membership in a delinquent peer group, antisocial values, history of antisocial behavior, skill deficiencies, or poor self control/impulsivity) is more likely to reduce future delinquency (Andrews & Bonta, 1994).
3. There is an obvious match between treatment approach and individual characteristics, and these matches often are ignored. (p. 23)

Thus, risk classification can be integrated systematically with need and personality categories in developing treatment plans and in evaluating treatment outcomes.

Sechrest (1987) expressed concern that classification systems have developed without any theoretical link to interventions. He argued that a classification system should be grounded in criminological theory and that programs should be developed to target the needs identified by the classification system. This systems approach to classification for treatment is supported also by Clements (1996), who added that knowledge of what has transpired inside the treatment experience is also necessary to assess the interaction between person type and treatment method.

The relevance of classification to treatment approach has not been fully explored. Treatment programs and classification systems are most often developed independently, and so the use of the classification for planning and evaluation is not fully exploited. A notable exception is the Level of Supervision Inventory (LSI) (Andrews & Bonta, 1994), a risk and needs typology that is specifically relevant to social learning and cognitive approaches. Van Voorhis (1997) argued that behavioral, social learning, and cognitive approaches have been demonstrated to be more effective than other approaches and, therefore, the LSI was developed to facilitate potency of the most effective intervention modalities.

Clements (1996) noted that much of what we now know about classification and treatment was available to us in the mid-1970s. At that time, observers might have expected ongoing refinements of existing classification systems and marked improvements in our abilities to predict treatment outcomes. However, advances have been few, and progress has been slow. Among recent developments are the cross-classification findings of Van Voorhis (1994) and the LSI and its growing empirical base (Andrews & Bonta, 1994).

Aside from the concerns mentioned previously regarding specific classification methods, implementation of existing typologies has been hampered by a lack of fit between the substance of the typology and existing treatment programs, a lack of focus on treatment outcomes, and the predominance of public safety concerns that support little more than risk classification. Moreover, few typologies used by criminal or juvenile justice systems have been informed by adequate recidivism data (Andrews & Bonta, 1994). Now that outcome information is in vogue, spurred by the advent of managed care as a funding strategy, opportunities are emerging to revisit the benefits of treatment classification systems.

METHODS OF TYPOLOGY DEVELOPMENT

Classification systems that have a treatment focus have been created using a variety of methods. MacKenzie et al. (1988) argued that two schools of typology development exist: theoretical and empirical. This is not to say that a classification system cannot have elements of both, but that the direction of development distinguishes among the systems. I-level, for example, is rooted in a theory of personality development (Grant & Grant, 1959). Levels of ego development were specified within a continuum of development, and, later, empirically defined delinquent subtypes were added to each level of development.

Megargee's approach to developing the MMPI-based system was considerably more pragmatic. Because the Federal Bureau of Prisons had administered the MMPI for many years, the opportunity to construct a useful typology presented itself in the files of the Bureau (Megargee & Bohn, 1979). Using advanced, multivariate techniques, informed by clinical expertise, the typology was derived empirically from analyses of MMPI scores and profiles.

For Jesness, the challenge was to create an objective method for classifying individuals into the I-Level types (Jesness, 1988). Concerns had been raised regarding the subjective and fuzzy boundaries among the I-Level types attributed to the clinical method of classification and poor interrater reliability. Because the typology was viewed as valuable for learning and evaluation, development of an objective

measurement tool was a major step forward. The Jesness Inventory, a 155-item self-administered instrument developed to measure 11 psychological constructs—including alienation, denial, and immaturity—was subjected to an empirical analysis of scores of participants whose I-Level diagnoses were known. These 206 participants were provided by Warren and her colleagues (see Jesness, 1988) as cases that represented ideally the subtype definitions. Based on the Jesness analysis, formulas were developed that would enable users of the Jesness Inventory to assign I-Level subtypes to clients based on responses on the inventory.

No typology is immune to criticism that focuses on reliability, internal validity, and external validity (Brennan, 1987). For that reason, use of multivariate statistical techniques and multiple samples can raise the quality of classification system development to a level in which a typology can be judged from several perspectives and its continued development can be facilitated by additional research. It is the application of these statistical methods that will move the development of typologies from the relatively inflexible form they have taken until now.

At the same time, the needs of users for meaning clarity, clarity of implications for treatment, fit with existing service systems, and ease of use need to be part of the typology development process. The MMPI-based system, for example, lacks the heuristic labels of other systems and provides 10 types—a relatively high number of classes for a treatment-oriented system (Zager, 1988). Building a body of treatment implications that could be integrated easily into a large correctional system was clearly an important challenge. On the other hand, the fact that the MMPI is widely accepted as a measure of several personality characteristics and, for a time, was institutionalized at the Federal Bureau of Prisons meant that issues of validity and measurement were of less concern than was the case for I-Level.

Typology development requires large samples; measures that are well tested for relevance to treatment, reliability, and validity; cluster analysis or hierarchical agglomerative analysis; and a similarity index (Brennan, 1987). Moreover, the internal validity of the typology is critical, in particular with respect to the homogeneity of the types, the extent to which the types describe the sample, and reliability of class

assignments. Finally, external validity needs to be assessed in terms of prediction, clinical impressions of users, and the process by which individuals will be assigned to types. Of the typologies that we review subsequently, only the Jesness and MMPI-based typologies have approached meeting these criteria.

CURRENT TYPOLOGIES

Several treatment-oriented typologies reported in the literature have been used in juvenile and adult correctional settings (Clements, 1996; Van Voorhis, 1988). Additionally, these typologies have been subjected to research testing their validity (construct and predictive) and reliability. Even though we are currently unable to test the construct validity of the typology reported in this article in terms of previously existing classification systems, we are interested in the extent to which the types we have identified resemble the types of other classification systems. To the extent that similarities exist, we can look to the lessons that have been learned about effective approaches with these types of persons for possible treatment recommendations. Dissimilarities will point to the need to rely more heavily on the expertise of clinical personnel and on the results of our own research.

The existing typologies that specify personality types are Warren's (1971) I-Level, the Jesness (1988) Inventory types, Quay's Behavioral Categories, and Megargee's MMPI-based types (Van Voorhis, 1994). The categories of each of these typologies are summarized in Table 1. I-Level and Jesness contain essentially the same types but differ in terms of method: Warren developed a semistructured interview with trained raters, whereas Jesness used a self-administered inventory containing 155 true-false questions. Recent subtype descriptions and labels reported by Jesness differ from those of the original I-Level types: Levels of development have been downplayed, and subtype labels and descriptions are less pathology-oriented. As is indicated in Table 1, Quay's types bear a similarity to certain I-Level types.

The MMPI-based system was developed and validated on a youthful offender population in the federal prison system; the I-Level, Jesness, and Quay Behavioral Categories systems describe types of

TABLE 1: Descriptions of Existing Typologies

Warren's I-Level ^a	Jesness ^b	Quay's Behavioral Categories ^c	MMPI-based ^d
I₂, Asocial Passive: Responds to unmet demands by withdrawing, whining, or complaining. Major concerns center on differentiating persons from objects. Others viewed solely as sources of gratification.	Undersocialized Passive: From deprived background; negative attitudes toward authority, family, and school; low verbal aptitude, nonconforming, inappropriate behavior; poor peer relations; and negative self-concept.		Item: A generally stable, well-adjusted group with minimal problems and lacking conflicts with authorities. Profile lacks elevation with scales generally under 70.
I₂, Asocial Active: Responds to unmet needs with open aggression. Major concerns center on differentiating persons from objects. Others viewed solely as sources of gratification.	Undersocialized Active: From deprived background; negative attitudes toward authority, family, and school; unpredictable, nonconforming, aggressive, and obtrusive; delinquent orientation; high self-reported delinquency.	Conduct Disorder: A factor involving aggression, both verbal and physical, associated with generally "disturbing" behavior and poor social relationships; seem to be suffering from behavioral excess.	Easy: Bright, stable, with good adjustment, personal resources, and interpersonal relationships. Many are underachievers. Scales that are often elevated are 4 and 3, and the profile slopes down to the right.
I₃, Immature Conformist: Conforms to whomever has the power at the moment; sees self as less powerful than others. Activity centers around learning how power is structured. They tend to apply stereotyped rules and simple formulas when interacting with others.	Conformist: Positive attitudes toward home, school, and authority; conforming behavior; often dependent (follower); positive, uncritical self-concept and low self-reported delinquency.	Attention Problems (also referred to as Inadequate-Immature): Has a poorly developed behavioral repertoire and an inability to come to grips with environmental demands.	Baker: Described as inadequate, anxious, constricted, and dogmatic, with a tendency to abuse alcohol. Profile has moderate elevations, with typical elevations on scales 4 and 2 and sloping down to the right.
I₃, Cultural Conformist: Conforms exclusively to behavioral expectations of a specific group of peers. Sees adult authority as insignificant. Activity centers around learning how power is structured.	Group-Oriented: From deprived background; low motivation, poor achievement, and negative attitudes toward school; alienated, distrustful, and hostile toward adults and authority;	Socialized Aggressive Disorder (also referred to as Socialized Delinquency): A constellation of behaviors that are neither a source of personal distress nor clearly	Able: Described as charming, impulsive, and manipulative; achievement-oriented; adjust well to incarceration. Profile has moderate elevations, typically on

They tend to apply stereotyped rules and simple formulas when interacting with others.	delinquently oriented friends; delinquent self-concept; high self-reported delinquency.	maladaptive; steals in the company of others, loyal to delinquent friends, often truant.	scales 4 and 9.
I ₃ , Manipulator: Counteractive to any source of power; adult or peer. Extremely distrustful of others. Activity centers around learning how power is structured. They tend to apply stereotyped rules and simple formulas when interacting with others.	Pragmatist: Generally positive attitudes toward school; positive self-concept; manipulative, sometimes obtrusive; inconsistency between self-evaluations and objective measures (e.g., official records and self-reported delinquency).	George: Described as hard-working, submissive, and anxious, with learned criminal values. Often take advantage of educational and vocational programs. Profile has moderate elevations similar to Baker, but scales 1, 2, and 3 are more elevated.	
I ₄ , Neurotic Acting-Out: Internally conflicted due to negative self-image. Responds to internal conflict by putting up a facade of superadequacy and by maintaining a high level of activity. Attempts to keep others at a distance by distracting behavior or verbal attack, even though he or she may be very sociable. Judges self and others based on rigid application of internalized values.	Autonomy-Oriented: Above-average verbal aptitude; behavior problems in school; negative attitudes toward authority; family conflicts; self-presentation as adequate and independent, but somewhat cynical and disenchanted; often provocative and nonconforming; high self-reported delinquency.	Delta: Described as amoral, hedonistic, egocentric, manipulative, and bright. Impulsive sensation seekers; have poor relationships with peers and authorities. Moderate to high elevation on scale 4, with other scales below 70.	
I ₄ , Neurotic Anxious: Also internally conflicted due to negative self-image. Responds to internal conflict with guilt, anxiety, or depression. Introspective; engages in superficial self-analysis to reduce anxiety. Judges self and others based on rigid application of internalized values.	Anxious Introspective: Mostly positive attitudes toward school; conforming; somewhat perturbable, dependent, anxious, and insecure; nondelinquent orientation; family and interpersonal conflicts; low official delinquency.	Anxiety-Withdrawal (also referred to as Personality Problem): Withdrawn, isolated, subjectively experienced anxiety, moderately open to adults and peers; has too little behavior rather than too much.	Jupiter: Described as overcoming deprived backgrounds to do better than expected in prison and on release. Profile has moderate to high elevations sloping up to the right with elevations typically on scales 8, 9, and 7.

(continued)

TABLE 1 Continued

Warren's I-Level ^a	Jesness ^b	Quay's Behavioral Categories ^c	MMPI-based ^d
I ₄ , Situational-Emotional Reaction: Responds to current crisis, situation, or an emotional change that is recent in origin. Judges self and others based on rigid application of internalized values.	Situational Inhibited: Above-average SES; positive attitudes toward school and family; positive, nondelinquent self-concept; confident; naive; conforming; good interpersonal relationships; low self-reported and official delinquency.		Foxtrot: Described as tough, street-wise, cynical, and antisocial. Have deficits in most areas, extensive criminal histories and poor prison adjustment. Profile has high elevations, sloping up to the right, with the top scale over 80 and others over 70, 8, 9, and 4 are the top scales.
I ₄ , Cultural Identifier: As part of his or her socialization process, certain values were internalized that permit a range of delinquent acts. Often play leadership roles and tend to be psychologically healthy. Judges self and others based on rigid application of internalized values.	Adaptive: High verbal aptitude; highly motivated for school; positive attitudes toward authority, school, parents, and self; confident; good interpersonal relationships; nondelinquent orientation; low self-reported and official delinquency.		Charlie: Described as hostile, misanthropic, alienated, aggressive, and antisocial; have extensive histories of poor adjustment, crimes, and substance abuse. Profile has high elevations, typically peaking on scales 8, 6, and 4, and sloping up to the right. How: Described as unstable, agitated and disturbed mental health cases; have extensive needs and function ineffectively in major areas. Profile has very high elevations, with at least three scales above a T-score of 70, and multiple elevations.

NOTE: MMPI = Minnesota Multiphasic Personality Inventory. The I-Level, Jesness, and Quay subtypes have been arranged so that, presumptively, they match within rows. The MMPI-based types are arranged from least to most deviant.

a. Descriptions taken from Harris (1988); developmental I-Level descriptions have been integrated into subtype descriptions.

b. Descriptions taken from Jesness (1988).

c. Descriptions taken from Quay (1979).

d. Descriptions taken from Zager (1988).

juvenile delinquents. Unfortunately, research on the construct validity of these typologies is rare. Using a sample of adult prison inmates, Van Voorhis (1994) empirically tested relations among the classifications of the Warren (1971) I-Level system, Jesness (1988), Quay's Adult Internal Management System, and the MMPI-based system. It was the only study of this kind. In 1988, she hypothesized that these systems would find in common the following constructs: Neurotic, Situational, Immature Dependent, Character Disorder/Psychopathy, Subcultural, Power-Oriented, and Manipulative. The pilot test revealed support between Quay and I-Level for a Neurotic Anxious subtype; no agreement on a Situational type; little support for an Immature Dependent type (undoubtedly because this was an adult sample); little support for a Manipulator subtype (again this may be due to age, because I-Level views this type as immature); and strong support among the I-Level, Quay, and MMPI-based systems for a Committed Criminal type. Further testing with a larger sample (Van Voorhis, 1994) found cross-classification support for four types: Situational, Neurotic Anxious, Committed Criminal, and Neurotic Acting-Out/Character Disorder. She suggested that the Immature Dependent and Manipulator types are likely to be found in juvenile populations.

The classification system reported here comprises natural clusters of cases, based on standardized self-report measures of self-esteem, values, family bonding, and school bonding. These measures were selected in collaboration with the programs to be evaluated as measures of key intermediate outcomes. The typology, therefore, is grounded in the perspectives of those who provide services to delinquent youths. As such, the types resonate with the thinking of service providers. The typology produced by this effort, then, may not resemble those found in the literature, but undoubtedly, commonalities can be drawn between the descriptions of some of the types. Moreover, we also note that Warren's (1971) I-level types were developed in much the same way (Harris, 1988), but through the use of qualitative data. In the sections that follow, we discuss the methods by which the types were developed and how they are being further developed and applied.

DATA

The Program Development and Evaluation System (ProDES), operated by the Crime and Justice Research Institute for the Department of Human Services, is an information system that tracks all youths in Philadelphia who are adjudicated delinquent and committed to a program of any kind. The ProDES database comprises court record data (including court and offense histories, sociodemographics, family and social histories, educational data, psychological test scores, and prior placements); standardized program intake assessments (risk and needs assessments, self-reported drug and alcohol use, self-reported family and employment information, and four self-report scales); standardized program discharge assessments (the same scales used at intake, interventions that were used, reports of positive and negative behavior, AWOLS [away without leave], arrests while in program, psychological test scores); and a follow-up at 6 months following program discharge (records of adult and juvenile new offenses, telephone interview with youth regarding community adjustment and consumer satisfaction, and a telephone interview with a parent or caregiver regarding the youth's community adjustment and consumer satisfaction). At the time the study was conducted, the database contained 5,136 cases.

Only the self-report standardized scales, as measured at the point of program admission, were used in the creation of the types. The scales, and subscales in the case of the School and Family Bonding Scales, are set out in the appendix.

METHOD

PARTICIPANTS

The sample for this study consisted of 2,738 adjudicated delinquency cases for which the scale data were available. Of these cases, 10.9% were girls, 76.2% were Black, and 11.4% were White. The mean age was 15.5 years. The most serious offense was distributed as follows: 37.6% personal, 37.1% property, 17.6% drugs, and 7.6% other. Attrition from the total available number, 5,136, was due to

missing data. Program staff collect the data at the point of entry into the program. Due to implementation problems in early 1994, the proportion of cases with scale data was far lower than in mid-1994 and later. No significant differences have been found between cases for which the data were collected and those that were missed. Since that point in time, scale data have been collected on 70% to 80% of all cases.

PROCEDURE

We noted previously that classification could have several purposes, from grouping offenders in terms of numbers of prior offenses to more complex goals of prediction and etiology. Because a variety of methods exist for creating groups among the same set of persons, it is critical that the method of classification used fit the purpose of the classification (Everitt, 1993). Thus, rather than judging classifications as true or false, it is more appropriate to determine the appropriateness of the classification for the use to which it will be put.

In this section, we discuss the methods that we applied in developing the ProDES typology. In a later section, we discuss further steps that will be taken to enhance our understanding of the types and their usefulness. Development of the typology has involved the following steps:

1. Principal components analysis of the 14 personality subscales (the basis variables) described previously.
2. Cluster analysis of the resulting principal components.
3. Definition of the resulting clusters in terms of the 14 basis variables.
4. Correlation analysis between the clusters and other case characteristics, such as demographic, family, and offense data.
5. A focus group of clinical staff to characterize groups of cases based on their familiarity with the youths.
6. Detailed examinations of a small number of cases nearest to the centroid of each cluster.
7. Matching cluster characteristics with characteristics of types in other typologies.

Our approach did not begin with a predetermined number of classes, as would be the case with discriminant and assignment

methods (Everitt, 1993). Instead, we applied a statistical technique—cluster analysis—to our data to discover natural groups of persons among our sample members. All analyses were performed using the K-means algorithms of SPSS 7.0. This algorithm uses the euclidian distance function and nearest centroid sorting.

The variables on which the classification was based comprised scores on the seven subscales of the School Bonding Scale, the five subscales of the Family Bonding Scale, the Self-Esteem Scale, and the Values Orientation Scale. The data were derived from the intake instruments completed on each youth between 2 and 4 weeks of program admission.

Two characteristics of the data made necessary an interim step in the analysis. First, because the metrics of each scale were not identical, the influence of a variable with a high range of possible points could bias the results. Second, strong intercorrelations among the subscales also might bias the results. If three subscales were found to measure essentially the same dimension, the combined influence of their presence in the cluster analysis could exaggerate the importance of that dimension. Given these concerns, we performed a principal components analysis on the data. Because the resulting four principal components explained 58% of the original variance, we elected to subject the component scores to the cluster analysis (Everitt, 1993).

RESULTS

The results of the principal components analysis are shown in Table 2. The analysis distinguished four significant components, and the rotated (Varimax) factor matrix was examined.

Factor 1 is dominated by the Family Bonding subscales. Four of the five subscales loaded heavily on this factor; only Identity Support did not. Factor 2 combines Self-Esteem, Values (the lower the score, the more prosocial), Perceived Opportunities for the Future, Perceived Consequences of Arrest, and Identity Support within the family. This factor appears to measure extent of socialization. Factor 3 is a School Bonding factor, with three School Bonding scales loading heavily and Perceived Opportunities loading nearly as high as on Factor 2. Finally,

TABLE 2: Principal Components Analysis (*N* = 2,738)

<i>Variables</i>	<i>Factor 1</i>	<i>Factor 2</i>	<i>Factor 3</i>	<i>Factor 4</i>
Self-Esteem	.0493	.7355 ^a	.1256	.0611
Values Orientation	-.1840	-.7362 ^a	-.1903	-.0212
Attachment to School	.0102	.2915	.7500 ^a	.0740
Attachment to Teachers	.2386	.0196	.6635 ^a	-.0050
School Commitment	.2002	.2238	.7550 ^a	.1746
Perceived Opportunities	-.0428	.5838 ^a	.4451	.0932
Consequences of Arrest	.0877	-.3772 ^a	-.0398	.1244
School Involvement	.0574	-.0530	.1023	.8202 ^a
Community Involvement	.1258	.0269	.0659	.8013 ^a
Caring and Trust	.6392 ^a	.3345	.2100	.0663
Identity Support	.3794	.6638 ^a	.0323	.0348
Control and Supervision	.6145 ^a	-.0751	.3107	-.1239
Intimate Communication	.7869 ^a	.0072	-.0169	.1650
Instrumental Communication	.8069 ^a	.0950	.1050	.1560

a. These variables are loaded most heavily on specified factors.

Factor 4 picks up only the two Involvement subscales: School Involvement and Community Involvement. Clearly, these factors bear a strong resemblance to Hirschi's (1969) elements of the bond to society.

The principal components analysis confirmed that some intercorrelations existed among the data. Having derived the four components and a factor score for each participant, cluster analyses were performed using the four sets of component scores rather than the original 14 variables.

THE CLUSTER SOLUTION

Cluster analysis has been called the "black art" by statisticians, largely because of the many subjective decisions that must be made. One such decision is the identification of the optimal number of clusters. Using available guidelines regarding the percentage of variance explained (*eta*) (Aldenderfer & Blashfield, 1984; Everitt, 1993) and consideration of the uses envisioned for the typology (monitoring treatment outcomes across 65 programs), a five-cluster solution was selected, that is, our interests in keeping the number of types to a

minimum outweighed the small increase in explained variance that was achieved by further subdivision of the sample.

Further analysis of the cluster solution involved consideration of its quality. We found that each cluster centroid, with one acceptable exception (the distance between Clusters A and C), was more than two standard deviations from the others. In terms of the homogeneity index, two of the five clusters—A and B—had indexes above one, indicating that their internal variance is no smaller than that for the entire sample; the others were well below one. Although these results invite caution, the fact that the homogeneity index is sensitive to sample size suggests that the clusters are acceptable.

Validating the cluster solution. Two approaches were used to test the validity of the cluster solution, one focusing on internal validity and the second on the external validity or “grounding” of the solution. To test the internal validity of the five-cluster solution, a series of bootstrap samples were drawn from the full data set. Fifteen random samples—three each of 25%, 50%, and 75% of the total sample—were drawn, and for each a five-cluster solution was derived. The cluster membership of cases within each of the random samples was then compared to their membership in the original, total sample, five-cluster solution. Although expectations of a perfect match are unrealistic, the fact remains that if natural clusters of juveniles do exist, we should be able to generally find the same type of solution in each random subsample. We established an arbitrary 75% cutoff point, such that if at least three fourths of the cases in the random subsample belonged to the same cluster as in the original solution, then the test was acceptable.

In the 15 different samples tested, only one fell below this standard. The level of stability found in these cluster solutions suggested to us that further development of this typology was justified.

Describing the clusters. Although the clusters were created on the basis of the four factors defined in Table 2, we can develop richer descriptions of the clusters by using the 14 basis variables. This step reintroduces the mean scores for each of the five clusters on each of the

14 basis variables that are presented in Table 3. Based on these data, we can distinguish among the five clusters as follows:

- Cluster A: Average Self-Esteem and Values for a delinquent population
Expresses relatively strong Attachments to School and Teachers
Highest scores on School and Community Involvement
Expresses strong Family Attachment and Communication
- Cluster B: Low Self-Esteem and extremely Antisocial Values
Expresses low levels of Attachments to School and Teachers
Perceives Opportunities for the Future to be low and Consequences of Arrest to be high
Does not feel accepted or respected by parents (low Identity Support); otherwise average on Family Bonding
- Cluster C: High Self-Esteem and prosocial Values
High Family and School Bonding scores
- Cluster D: High Self-Esteem and average Values
Low Attachment and Commitment to School
Low scores on Communication with Parents, but average on Family Bonding scores that involve emotional content
- Cluster E: Below average Self-Esteem and Antisocial Values
Above Average School Bonding scores
Very low Family Bonding scores

In addition, it is possible to characterize the clusters in terms of any number of descriptor variables, such as age, race, gender, family, and offense histories (measures not used to develop the clusters but that reasonably can be expected to relate to the classification). Table 4 lists these data, highlighting only significant differences among the clusters on these variables. By combining descriptors derived from the cluster analysis with record data correlates, we can begin to define more clearly the types of persons identified by the data analysis. Type A, for example, was found to be younger and to more often commit auto thefts. Type B is distinguished by an overrepresentation of girls and Latino youths, truancy, drug problems, and family violence. Type C, an apparently socially well-balanced type, is also a type with high rates of prior offenses, including serious assaultive behavior. Type D is an older type that is distinguished by truancy and

TABLE 3: The Clusters and Their Basis Variables (N = 2,738)

Cluster	Self-Esteem		Values Orientation		School Attachment		Attachment to Teachers		School Commitment		Perceived Opportunities		Consequences of Arrest	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
A (n = 513)	8.52	1.368	18.04	4.81	4.10	0.70	3.85	0.65	3.59	0.46	3.79	0.78	3.15	1.20
B (n = 391)	6.16 ^a	2.05	24.05 ^a	4.90	2.80 ^a	1.07	3.18	0.94	2.76 ^a	0.59	2.59 ^a	0.87	3.45 ^a	1.09
C (n = 874)	9.38 ^a	0.83	11.32 ^a	4.83	4.53 ^a	0.60	4.09 ^a	0.63	3.81 ^a	0.46	4.39 ^a	0.64	2.85 ^a	1.27
D (n = 504)	9.24	0.94	15.74	5.07	3.49	0.95	3.07 ^a	0.87	2.97	0.51	3.85	0.77	3.08	1.14
E (n = 456)	8.07	1.73	20.12	5.16	4.28	0.66	3.83	0.77	3.51	0.52	4.01	0.77	3.03	1.23
Total	8.45	1.77	16.97	6.63	3.93	1.00	3.66	0.86	3.39	0.64	3.82	0.96	3.08	1.84

Cluster	School Involvement		Community Involvement		Caring and Trust		Identity Support		Control and Supervision		Intimacy and Communication		Instrumental Communication	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
A (n = 513)	2.03 ^a	1.28	2.57 ^a	1.37	4.12	0.42	3.35	0.73	3.72	0.67	3.19 ^a	0.88	3.53 ^a	0.68
B (n = 391)	1.68 ^a	1.16	2.01 ^a	1.30	3.52	0.73	2.59	0.80	3.55	0.79	2.52	1.11	2.68	1.01
C (n = 874)	1.95	1.26	2.54	1.41	4.41 ^a	0.43	4.17 ^a	0.63	4.10 ^a	0.65	2.93	0.95	3.43	0.79
D (n = 504)	1.64	1.14	2.03	1.30	3.85	0.53	3.58	0.69	3.05 ^a	0.81	1.93	0.80	2.32	0.75
E (n = 456)	1.79	1.21	2.16	1.32	3.30 ^a	0.74	2.57 ^a	0.75	3.24	0.84	1.64 ^a	0.66	2.07 ^a	0.73
Total	1.84	1.23	2.30	1.37	3.92	0.68	3.38	0.95	3.60	0.84	2.51	1.06	2.90	0.98

a. High and low means for each basis variable.

an overrepresentation of White youths. Finally, Type E, which is marked by extremely low family bonding scores, contains many youths with histories of family violence, drug abuse, violent offense histories, and an overrepresentation of girls.

Further interactions with program staff at various agencies have raised concerns about only one of the types, Type C. Although this type appears to be psychologically healthy and relatively well attached to others, youths of this type are found frequently in mental health placements for physical and sexual violence. Given the extensive offense histories of so many of these youths, we suspect that a key to understanding the type is the unusually high scores on "perceived opportunities for the future" and unusually low scores on "consequences of arrest." Both of these scores, combined with the positive scores cited previously and the level and type of prior offenses, suggest a type of youth who is detached from reality and who views the world through "rose-colored glasses."

It may be that this cluster contains two types of persons: (a) youths who have positive outlooks on life, supported by the internalization of values that permit some types of delinquency; and (b) youths who present a facade of prosocial values and positive social relationships but who are able to commit acts of violence without experiencing shame or self-degradation. For such youths, neither their behavior nor the reactions of others appear to affect their positive outlook on life. We will continue to explore this type with clinical staff of the programs. Our challenge is to determine if Cluster C masks important differences among persons that make a difference in program outcomes.

THE FOCUS GROUP

The addition of subjective methods to statistical methods can greatly improve the quality of a classification system (D. M. Gottfredson, 1987; Megargee & Bohn, 1979). To test our solution, we invited the staff of a delinquency treatment program to describe the groups of their clients identified by the cluster. These clients had been part of the cluster analysis, and their cluster membership was known. The program staff was not provided with any descriptions of the clusters. They were given no information other than five groupings of names. More

specifically, each staff member was given five lists of names of youths from their own program and no other information. They were asked to consider the five lists as five groups of clients and to describe each group. No terms or adjectives were suggested. They were asked to use their own words in developing the descriptions.

The discussion lasted several hours, and for each of the five groups, staff of the program were able to identify the majority of the characteristics empirically derived from the analysis. For example, they identified Cluster A as being compliant and lacking in leadership skills, Cluster B as having low self-esteem and antisocial values, and Cluster E as having particularly poor family relationships. Finally, they ranked the clusters in terms of which were most difficult to work with in a community program, producing the exact order that we had developed based on the empirical analysis. From least difficult to most difficult, the ordering was A, C, E, D, B. The fact that the program staff, with their personal and intimate knowledge of each of the youths, were so closely aligned with our independent and empirically based classification convinced us that the classification was not only statistically adequate but that it was grounded in the experience of program life.

EXAMINING CASES AT THE CENTROID

After extensive discussion about the clusters, we have begun to refer to them as “delinquent types” and have begun interpreting the types based on the data, comments by program staff with regard to discussions of actual cases, and an examination of small groups of cases that were located near the centroids of each cluster. By pulling a few cases that seemed to naturally exemplify the types, we were able to gain a better understanding of the variations that might occur among even the most typical members of a type.

This examination showed that only Type A contained a sizable number of cases that were more than one standard deviation from the centroid. Those Type A youths further away from the centroid differed from the others in that their Family Bonding scores were lower. Their school and community involvement scores remained high.

TABLE 4: Other Characteristics of the Clusters

<i>Descriptor Variables</i>	<i>Cluster A (n = 513)</i>	<i>Cluster B (n = 391)</i>	<i>Cluster C (n = 874)</i>	<i>Cluster D (n = 504)</i>	<i>Cluster E (n = 456)</i>
Mean age ($p < .001$)	15.3	15.2	15.6	15.7	15.6
Percentage female ($p < .001$)	6.5	12.6	11.0	3.8	17.9
Percentage Latino ($p < .001$)	9.0	15.8	9.8	5.6	11.3
Percentage Black ($p < .001$)	81.3	69.4	79.9	80.1	78.7
Percentage of history of family violence ($p < .01$)	12.9	15.1	9.7	8.6	15.5
Percentage that perceives family as close ($p < .001$)	89.2	63.5	92.3	87.9	64.5
Percentage not attending school ($p < .001$)	43.8	54.1	34.5	51.7	46.6
Percentage with self-reported drug abuse problem ($p < .001$)	9.5	11.8	4.5	5.3	11.2
Percentage of staff-reported positive peer relations ($p < .001$)	37.2	21.9	40.4	30.5	33.9
Percentage of injured victim in current offense ($p < .05$)	23.1	16.4	25.0	17.7	25.6
Percentage for whom staff rate parental control as effective ($p < .001$)	42.4	28.1	49.9	42.9	35.9
Percentage with more than two prior petitions (n.s.)	26.3	20.3	26.7	22.7	21.5
Described by staff as:	Calm, cooperative, not leaders	Alienated, deprived	Easy, compliant	Active, lots of family problems	Significant family problems, hurt, angry

DISCUSSION

COMPARING THE ProDES TYPOLOGIES TO OTHER TYPOLOGIES

Van Voorhis (1988, p. 118) identified eight common constructs among five classification systems (I-Level, Moral Development, Conceptual Level, Quay, and the MMPI-based system):

- Cognitive Development: I-Level, Moral Development, and Conceptual Level each specify continua of psychological development.

Although the relatively low age of the Type A suggests lower maturity than the other types, the ProDES typology contains no developmental dimension.

- **Neurotic: I-Level** (here including Warren, 1971, and Jesness, 1988), Quay, and the MMPI-based system identify persons whose behavior is attributed to substantial internal conflict. Typically, these persons are introspective and anxious. Within the ProDES typology, internal conflict can be inferred from a combination of low self-esteem, low scores on Caring and Trust (from the Family Bonding Scale), and low scores on Identity Support (from the Family Bonding Scale).
- **Situational: I-Level**, Quay, and the MMPI-based systems describe some individuals as being involved in the justice system as a result of reactions to immediate situations in their lives. Van Voorhis (1994) reported finding relations among the classifications of the three typologies on this type in an adult population. ProDES is unable to tap this construct, but a situational offender is suggested by the presence of strong bonds to family and school.
- **Immature Dependent: I-Level**, Quay, and the MMPI-based systems contain types who are identified as passive, compliant, fearful, and dependent. This construct is not measured directly by ProDES. We have found, however, that certain patterns of scores indicate a need to please others and that this pattern is consistent with staff descriptions of youths classified in Type A. Moreover, Type A is one of two types for which age is significantly lower than it is for the other three types.
- **Character Disorder, Psychopathy, Sociopathy: I-Level**, Quay, and the MMPI-based systems contain types that are manipulative, charming, and impulsive. I-Level makes no specific reference to psychopathy or sociopathy. Moreover, ProDES contains no measures of this dimension. Based on our exploration of data and staff feedback to date, we believe that a high score on Self-Esteem combined with a high score on Values Orientation, in which a high score indicates antisocial values, may indicate psychopathy.
- **Subcultural: Although the MMPI-based system contains no such type**, both I-Level and Quay identify persons who have been socialized into a delinquent subculture and who seek to adhere to the standards of that group. The Values Orientation Scale clearly measures a delinquent orientation. Its basis in Walter Miller's (1958) subcultural theory is clear (Jesness, 1983).
- **Power-Oriented: Persons who seek to counteract the authority of others and gain control of situations themselves are found in all three typologies.** This dimension is not measured by any of the scales used by ProDES.
- **Manipulative: All three systems identify persons who seek to manipulate others for no particular reason.** This is their primary means of

social interaction. ProDES does not measure this dimension. A weak attachment to others, generally, gives us some indication that manipulation is a likely response mode, and attachments to others are measured by the School and Family Bonding Scales.

Looking at the other typologies from the perspective of the five ProDES types, we can begin to hypothesize about the nature of these groups of youths. Type A appears to bear some similarity to the Immature Dependent construct identified by Van Voorhis (1988). Immaturity is suggested by the relatively low age of this group (a significant but weak relation), and conformity is suggested by scores on School and Community Involvement, scales that were atypically high for this sample. The high scores on both the Instrumental and Intimate Communication scales of the Family Bonding Scale suggest dependency. In addition, program staff describe these youths as compliant and followers.

Type B appears to be a subcultural type. This construct is indicated by the Values Orientation mean score (very antisocial) and the staff rating on Peer Relations (a negative score on this single item indicates delinquent peers). We have rejected the Character Disorder construct suggested by the high (antisocial) mean score on Values Orientation because of the low Self-Esteem scores. The possibility also exists that the Power-Oriented construct is being tapped by the combination of poor attachments to authority figures and the lack of self-control observed by program staff. It should be noted that Type B is the modal group among the two programs in Philadelphia that target Latino youths.

Type C's profile suggests a situational type. With the exception of intimate and instrumental communication within the family and the two involvement scores, all mean scores on the 14 subscales are the highest of the five types (or prosocial, in the case of Values Orientation). Even staff reports of peer relations and parental supervision are positive; they are described by staff as "compliant." A contradiction to this picture emerges when we examine their delinquent behavior. They have relatively extensive offense histories, have high rates of violent offenses, and are the modal group in two institutions for sex offenders and chronically violent youths. We cannot state with confidence any hypotheses about the nature of this type at this time.

The mix of high and low scores on the profile of Type D suggests internal conflict. Their attitudes toward, and perceptions of, school are negative, and communication with parents is self-reported as poor. However, they feel attached to their parents and feel that their parents care for them, and their self-esteem scores are high. Staff describe them as having "lots of family problems," and yet they rate the quality of parental control as fairly high. These youths, on the other hand, rate the Control and Supervision of their parents as low. The apparent alienation from school and lack of communication with parents suggests that these youths are distancing themselves from any kind of authority structure. One of Van Voorhis's (1988) constructs is suggested: Power-Oriented. However, we have no reason to believe that these youths seek to control situations without a larger purpose. They may be goal-oriented and may better resemble the Autonomy-Oriented type suggested by Jesness (1983).

The Neurotic construct is suggested by the characteristics associated with Type E. This type of youth has extremely low Family Bonding scores combined with relatively high School Bonding scores, indicating specific rather than general alienation and feelings of being rejected by parents. We note, in particular, the very low scores on Identity Support and Intimacy and Communication. Self-Esteem scores are relatively low, and values tend to be antisocial. Recorded family violence is relatively high for these youths. We infer from these data that these youths are experiencing internal conflict, are in touch with feelings of pain, and are willing to express those feelings openly.

Except for Type C, then, we have some indication that the types we have found fit the constructs identified by Van Voorhis (1994). At present, we are able to hypothesize that certain similarities will be found as we pursue our study of these types. Clearly, without empirical tests of concurrent validity, we cannot speak with confidence about similarities to types identified in other typologies. We will pursue opportunities to test for concurrent validity, undoubtedly with the Jesness Inventory.

We also need to continue to look for ways to learn more about Type C. Because this group is tightly clustered on the basis variables, this exploration will involve measures not used to construct the typology. Two programs that routinely provide clinical diagnoses have offered to assist in this process, and the suggestion has been made to

examine IQ as a means of differentiating psychopathic youths from others. Then, too, we expect that those programs with psychiatric staff will be able to assist in this effort by providing other diagnostic information.

LIMITATIONS

It is clear to us that the types that have been produced for this information system are unique to this system. Moreover, our knowledge about the types is inadequate for developing an understanding about any person-program interactions that we observe. At this time, we can neither apply to these new types knowledge developed through the use of other typologies nor generalize what we learn about program-type interactions across the programs that ProDES tracks. We expect, however, that as our hypotheses regarding the nature of the types are confirmed or disconfirmed, sufficient knowledge will be generated to facilitate better matching of youths to interventions.

The choice between adopting an existing typology and creating a new one rests on relative benefits and costs. We believe that no typology is now being used with sufficient frequency to suggest that the advantages of its adoption would outweigh those of creating a typology that fits the perspectives and language of its users. The basis variables of the new typology reflect the underlying objectives of an entire system of delinquency programs. The typology, then, describes youths in terms of their status on these targeted person dimensions at the point at which treatment begins.

FURTHER DEVELOPMENT

In our discussion of methods, we outlined the steps that have been taken thus far to develop a typology that is useful for program evaluation. Our knowledge of the five types is limited at present. We certainly lack knowledge about the nature of each type, their responsiveness to different intervention modalities, and their responsiveness to different treatment environments. Moreover, because the population of adolescents will undoubtedly change over time, it will be necessary to revalidate the types periodically. Because the typology is embedded

in a permanent outcome-monitoring system, however, its further development can be planned strategically.

To learn more about the types, three approaches are being implemented: (a) a test of concurrent validity, using the Jesness Inventory, to further investigate the nature of the new types; (b) additional focus groups with different program staff groups to gather additional descriptive data on each of the five types; and (c) collection of diagnostic classifications used by different agencies to describe the same youths who have been classified by ProDES. Each of these investigations will add information about the nature of each type.

Ongoing development of the typology will also depend on periodic revalidation of the typology, using the same clustering method described in this article. Each revalidation that results in a classification change of more than two thirds of the original cases will be accompanied by a new test of concurrent validity as well as new focus groups to gather descriptions of the new types.

Over time, information regarding the impact of different treatment modalities with each type will add to our knowledge. Recidivism, program adjustment, and changes on the self-report measures are the primary outcomes that will be used to examine interactions between type of youth and type of intervention.

CONCLUSION

Megargee and Bohn (1979, p. 33), in presenting the MMPI-based system, argued that there are seven criteria for a good classification system:

1. Sufficient completeness so that most offenders can be classified.
2. Clear operational definitions to avoid ambiguity.
3. Adequate reliability across raters.
4. Sufficient validity with respect to the attributes and behaviors predicted by the systems.
5. Sufficient dynamic properties so that changes in attributes, behavior, or status are reflected by a change in classification.
6. Implications for treatment or intervention.
7. Economical classification of large numbers of participants.

Thus far, we are comfortable that we can classify individuals reliably and efficiently. We have constructed the classification system to be exhaustive, although we recognize that individuals within any group can vary from the prototypical to the marginal.

Several advantages are gained by locating a typology in an ongoing process of data collection. First, development of the types is enhanced by the opportunity to test predictions about type-program interactions. Second, as the population of delinquents changes, the typology can be revised to reflect those changes. We are finding, for example, that the proportions of youths entering the system with substance abuse problems and histories of mental health problems are increasing. It may be that these changes in population characteristics will affect the nature of the types that have been identified to date. Finally, we have a typology that is being applied to an entire juvenile justice system. Decisions of the court, probation staff, and correctional staff can use a common set of knowledge about person-program interactions.

Because of the way ProDES is constructed, type membership is likely to change over time. The measures that underlie the typology are dynamic in nature; we expect change on these measures as a result of treatment. We collect data on the scales that comprise the classification system at the beginning and end of treatment, with the aim of using these data as outcome indicators. It follows, then, that as scale scores for an individual change, so can type membership. Our view is that these changes will further enhance our ability to understand the treatment implications of different type-program interactions.

APPENDIX

Self-Report Standardized Scales and Subscales Used in the Creation of the Typology of Clients

Self-Esteem (Rosenberg, 1965)

Values Orientation (from the Jesness Inventory; Jesness, 1983)

School Bonding (Giordano & Cernkovich, 1987)

- Attachment to School
- Attachment to Teachers
- School Commitment

- Perceived Opportunities
- Consequences of Arrest
- School Involvement
- Community Involvement

Family Bonding (Cernkovich & Giordano, 1992)

- Caring and Trust
 - Identity Support
 - Control and Supervision
 - Intimate Communication
 - Instrumental Communication
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