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DEVELOPMENT OF TEMAS, A MULTICULTURAL THEMATIC APPERCEPTION TEST: PSYCHOMETRIC PROPERTIES AND CLINICAL UTILITY

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INTRODUCTION

The propriety of administering psychological tests standardized on nonminority, middle-class, and English-speaking populations to examinees who are not fluent in English or are from culturally or demographically diverse backgrounds has been a controversial topic for over five decades (Dana, 1993b; Olmedo, 1981). Although the controversy originally surrounded intelligence testing of Blacks, similar allegations of bias toward Hispanics have been raised in the

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context of personality testing and diagnostic evaluation, a topic which is our present focus. The prevailing view is that in the absence of empirical evidence to the contrary, standard mental health evaluation procedures are considered unbiased (e.g., Lopez, 1988). The other side of the polemic argues that clients' variations in English-language proficiency, cultural background, or demographic profile pose potential sources of bias for standard assessment and diagnostic practices (e.g., Dana, 1993b; Malgady, Rogler, & Costantino, 1987). That is, behavior recorded in an assessment situation—whether by symptom rating scale, projective test or face-to-face psychiatric interview—may present a distorted image of the attributes the assessment process is intended to reveal. Even in the absence of compelling empirical evidence, we argue that assessment procedures ought not to be routinely generalized to different cultural groups, and multicultural tests and assessments should be increasingly used (Costantino, 1992; 1993; Malgady, 1990, 1996).

This chapter first presents a review of selected literature on the topic of multicultural assessment. This literature is organized according to a variety of definitions of test bias in accordance with psychometric tradition: face and content validity, mean differences, factor invariance, differential validity/prediction, and measurement equivalence. We then turn to a specific effort to develop a "culturally sensitive" psychological assessment technique for pluralistic groups: the TEMAS ("Tell-Me-A-Story") test. Developmental and psychometric research on this test has been conducted on Hispanic children and adolescents, as well as Blacks and Whites. Finally, the clinical utility of the TEMAS test is illustrated through the presentation of three case studies.

PSYCHOMETRIC DEFINITIONS OF BIAS

Face and Content Validity

At the most rudimentary level, polemics persist about apparent bias in the nature of symptom indicators and diagnostic criteria defining psychopathology in the context of mainstream American society. Some items in widely used assessment devices such as the Minnesota Multiphasic Personality Inventory (MMPI) refer to culturally patterned behaviors, beliefs, and feelings that are not pathological in certain Hispanic subcultures (Padilla & Ruiz, 1975). For example, Rogler and Hollingshead's (1985) discussion of the salience of spiritualistic beliefs in traditional Puerto Rican culture, such as mental illness being caused by the invasion of evil spirits, challenges the apparent validity of test items or interview questions inferring pathology from

spiritualistic responses. Others in cross-cultural psychiatry have raised similar concerns about the danger of ethnocentrism in defining psychopathology, that is taking an "etic" perspective rather than an "emic" view from within the culture of concern (Dana, 1993b; Kleinman & Good, 1985). Without belaboring this point, such challenges are tantamount to psychometric questions of face validity: Does the test or psychiatric interview elicit an *ostensibly* valid assessment in the context of the client's culture? Two observations emerge in attempting to answer this question.

First, many of the allegations of apparent invalid assessment of minorities are largely impelled by argument from counter-examples; to our knowledge no research has attempted to shed empirical light on face validity. To do so, research on face validity might address whether or not items suspected of bias on commonly used psychological scales or suspect psychodiagnostic criteria provide an assessment that is concordant or discordant with other items or diagnostic criteria that are beyond reproach. Such research would reveal not only the extent to which particular measures or diagnoses appear biased, but also would suggest whether differential clinical assessments are obtained with and without the suspect items or criteria.

The second observation is that, if face validity concerns are consequential to assessment and diagnosis, research needs to disentangle culturally patterned behavior from pathological behavior. It is probably safe to assume that there are some Hispanics and culturally diverse individuals who feel possessed by spirits because of their cultural predisposition to interpret symptomatology in this manner, as well as others who report being possessed because they are schizophrenic. Awareness of culturally patterned behavior is well intentioned, but does not imply that behavioral signals associated with dysfunction in the mainstream culture should be disregarded just because they may have mainstream cultural roots. Research is needed that not only identifies which behaviors are of questionable mental health significance for cultural reasons, but also provides empirical evidence of how cultural and pathological behavior can be discriminated in minority clients. As Lopez and Hernandez (1987) suggested, there is a lack of attention to cultural nuances in standard diagnostic criteria, such as the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III-R). In the absence of guidelines for how to take culture into account in diagnosis, Lopez and Hernandez found that clinicians tend to develop their own notions of how cultural information is considered in a diagnostic situation. Unfortunately, uninformed clinicians may be disregarding their client's culture, and

misinformed clinicians may be indiscriminately applying cultural stereotypes to culturally diverse people, who may differ substantially in language proficiency, acculturation, and demographic background.

The face validity issue clearly affects a related issue of content validity. If standardized test items or DSM-IV criteria that are suspected or eventually known to be biased were discarded, the remaining content could well represent an inadequate sample of the behavioral domain, which is the intention of measurement or diagnosis. Thus, efforts to refine current assessment procedures cannot be merely reductionistic. They must also be reconstructive to ensure that key elements of minority clients' cultures are not lost in the definition of psychopathology. There is a need to define which symptom indicators and diagnostic criteria cross cultures and which are unique to a given cultural context.

Thus, the available evidence on bias in face and content validity is *qualitative*. Cross-cultural research is needed that examines *quantitative* formulations of the face and content validity of diagnosis and measurement of pathological behavior among Hispanic populations. Bias in face and content validity has been argued exhaustively, but empirical research on measurement outcomes is still lacking.

Mean Differences Between Populations

A second way in which bias is psychometrically defined is in terms of different normative profiles between ethnic or cultural groups. Psychological assessment conventionally implies a comparison of an individual's behavior or performance with that of a norm group. The issue of differential normative performance and the attendant question of whether ethnic-specific norms need to be developed are prominent in the minority assessment literature (e.g., Rogler, Malgady, & Rodriguez, 1989). Even in unstructured situations, such as routine psychiatric interviews where clinicians do not explicitly refer to normative data, a minority client is implicitly compared with the clinician's Anglo-American perception of pathology. Although it is debatable whether or not Hispanics have higher psychiatric prevalence and symptomatology rates than other ethnic groups (Lopez, 1988; Malgady, Rogler, & Costantino, 1988), when epidemiological studies have reported higher prevalence rates and higher levels of symptomatology among Hispanics, such findings have been questioned on the basis that they reflect biases of the Anglo-American culture (e.g., Good & Good, 1986).

Using the Hispanic Health and Nutrition Examination Survey (HANES), Moscicki, Rae, Regier, and Locke (1987) reported higher

rates of depression, as measured by the CES-D, among Puerto Ricans in comparison to Mexican- and Cuban-Americans, as well as White norms. Canino et al. (1987) estimated DSM-III-R prevalence rates, based upon the Diagnostic Interview Schedule (DIS), among Puerto Rican islanders, finding few differences from White mainland norms. The major ethnic group differences consisted of higher Puerto Rican rates of cognitive impairment, somatization, and alcohol abuse/dependence. Malgady et al. (1987) reviewed 37 studies of the MMPI involving cross-cultural comparisons of Blacks, Hispanics, and Whites. Of seven studies pertaining to Hispanics, six reported Hispanic-White or Hispanic-Black differences on select MMPI scales. More recently, Shrout et al. (1992) compared native Puerto Ricans, Mexican-Americans, and non-Hispanic Whites on five DSM-III disorders, as measured by the DIS. They found Mexican-Americans to be at high risk for affective disorder and alcohol abuse/dependence, whereas Puerto Ricans were at the highest risk for somatization disorder.

Thus, unlike the first definition of test bias, there is considerable empirical research, though some equivocal, on normative differences between ethnic populations. However, regardless of the weight of evidence favoring a mainstream versus ethnic-specific frame of reference, the presence of mean differences between populations—whether in terms of test norms or epidemiological prevalence rates—is inconclusive evidence of bias. Demands for separate test norms or culturally oriented diagnostic criteria implicitly reflect an underlying assumption that one ethnic population is not more disordered than another. Hence the assumption is that the norms of one group must be biased against the other group. If mean differences between ethnic populations represent valid differences in pathology—and this remains unknown—the development of separate norms would be a disservice to the ethnic minority community: Disordered individuals would then tend to be underdiagnosed and would be less likely to receive therapeutic intervention. The presence of mean differences between an ethnic minority group and the majority group only suggests that the majority yardstick may not be appropriate for the minority or that actual differences may exist in a particular domain. Further inquiry is required to examine the reasons for population differences, which may or may not be valid differences in the construct being measured.

Invariance of Factor Structure

The issue of bias in measurement has also been defined by comparing the internal or latent factor structure of tests across different populations. The term “factor invariance” refers specifically to the

congruence of factor structures or factor loadings across populations (Mulaik, 1973). Technically, a difference between ethnic groups in number of factors, pattern of factor loadings, percentage of variance explained, or correlations among factors would constitute evidence of test bias.

Estimation of factor invariance among White, Black, and Hispanic children has appeared in the intelligence testing literature (e.g., Gutkin & Reynolds, 1981a, 1981b), but little is known about cross-cultural variations in factor structure of personality tests or symptom scales. One exception is the Center for Epidemiological Studies Depression Scale (CES-D), which has been found to display similar factor structures among White, Black, and Mexican-American groups (Aneshensel, Clark, & Frerichs, 1981; Roberts, 1980). Factor analytic research on the MMPI has produced more ambiguous findings. Differences in both the number and composition (i.e., loadings) of MMPI factors among Whites, Blacks, and Mexican-Americans have been reported (Holland, 1979), whereas other studies have not found such differences (Prewitt-Diaz, Noguera, & Draguns, 1984).

Thus, the empirical findings of factor invariance across ethnic populations are limited in scope and equivocal. There are also technical psychometric problems with this research. Olmedo (1981) has called attention to problems in determining the congruence of factors across ethnic groups, and recommended confirmatory factor analysis to determine how well the factor structure extracted in one population fits the factor structure of another population. Another approach is offered by Mulaik (1973), who detailed the assumptions and procedures necessary and sufficient to establish factor invariance. Both Olmedo's and Mulaik's approaches have been largely ignored in cross-cultural factor analysis research.

The consequences of differential latent structure in a test depend upon the manner in which scores are profiled. A test that offers a profile of multiple scales derived from factor analysis is of questionable utility if the items do not coalesce into the same factors with minority examinees as with majority examinees. In this case, differential factor structure in the minority group would suggest that another arrangement of items into different scale scores is warranted, and at the very least would attenuate reliability. On the other hand, if different factor structures underlie a total test score, the considerations raised in discussing differences in normative performance apply to this situation as well. Mere observation of different factor structures does not in itself verify test bias, unless it is shown that ethnic minorities are being evaluated unfairly by the test in question.

Assuming that overall reliability is not substantially affected, and that only the number or composition of factors varies, the test may be measuring different constructs or different dimensions of the same construct cross-culturally. Variations in the internal properties of a test across cultures invite research to determine whether there are accompanying variations in the test's external properties or construct validity.

To the best of our knowledge, the issue of whether factor structures of symptomatology patterns are variant or invariant cross-culturally has not been examined in regard to psychiatric diagnosis. Even in nonminority psychiatric research, DSM-III-R diagnostic categories bear little resemblance to the symptom clusters that emerge from factor analytic studies of psychopathology (Mirowsky & Ross, 1989). Thus, it is hardly surprising that cross-cultural differences in the factor structure of symptom indicators have largely been ignored.

Differential Validity/Prediction/Measurement Equivalence

Other definitions of bias refer to population differences in the manner in which test scores relate to an external criterion-related measure. Differential validity is a question of equivalence across populations in terms of validity (correlation) coefficients (Cole, 1981). Differential prediction is a question of equivalence of the accompanying regression equations (Drasgow, 1982). If a test's correlation with a criterion-related measure varies cross-culturally, individuals from different cultures with the same test score have different predicted scores on the criterion variable.

The personality testing literature reveals a general neglect of differential validity and prediction with culturally diverse populations. Evidence that the criterion-related validity of standardized personality profiles or symptom scales is substantially lower for Hispanics and Blacks than Whites would constitute strong evidence of test bias, implying that test scores would be less relevant to the clinical disposition of Hispanic and Black clients. Independent of validity, evidence of differential regression equations would suggest that test bias takes the form of under- or overprediction of a criterion-related variable, implying that unfair clinical disposition of Black and Hispanic clients is likely to occur systematically.

An analogous problem arises in diagnostic situations when we inquire about how cultural factors might influence the validity of clinical judgments about Hispanic and Black clients. Some research specific to Hispanics suggests that greater psychopathology is inferred when clients are interviewed in Spanish than in English (Del

Castillo, 1970; Price & Cuellar, 1981). Yet other studies have reached the opposite conclusion (Marcos, Alpert, Urcuyo et al., 1973; Marcos, Urcuyo, Kesselman et al., 1973). Although this literature has been critically reviewed elsewhere (Vazquez, 1982), there is still no resolution of this important issue, which can be framed in terms of a psychometric question of whether or not cultural and language factors bias the criterion-related validity of psychiatric diagnosis.

A highly refined definition of test bias concerns the concept of measurement equivalence, which refers to the relationship between observed measurements and underlying latent traits of examinees from different populations (Drasgow, 1982, 1984). When measurements are not equivalent across ethnic groups, bias occurs because individuals from different cultures with the same underlying symptom or severity receive different observed test scores or diagnoses. In other words, numerical test scores or nosological classifications have a different functional meaning across ethnic groups. Needless to say, there are very few applications of this measurement technique in personality or psychiatric research, and none has been cross-culturally oriented.

Drasgow (1982) reviewed the literature on ability and aptitude testing in light of the ubiquitous finding that for most performance tests there is little evidence of bias in terms of differential validity. His own simulation of differential validity for two groups of equal latent ability showed that, if measurement equivalence is not satisfied, statistical significance tests are insensitive to true differences between validity coefficients. Because statistical power drops to near zero when measurement equivalence is lacking, studies of bias are incapable of detecting validity differences under this condition. Drasgow concluded, therefore, that unless prerequisite measurement equivalence is established, the failure to observe significant differences in validity coefficients should not be taken as evidence that tests are fair to ethnic minority groups.

INTRODUCTION TO THE TEMAS

The theme emergent from the research we have discussed is that traditional psychological testing and psychiatric diagnostic practices have been challenged with regard to propriety for Hispanics and other ethnic/racial minority groups, according to a variety of psychometric definitions of bias. Nevertheless, despite several decades of rhetoric and scattered research efforts, there is some empirical consensus, depending upon the particular definition of test bias, that cultural factors do indeed impact on the outcomes of standardized testing and psychiatric diagnosis. There is a need, therefore, to develop culturally sensitive psychologi-

cal tests for reliable and valid diagnosis and personality assessment of culturally and linguistically diverse children and adults. In the next section, we consider developmental and psychometric research on a thematic apperception test (TEMAS) that was developed in response to criticisms of standardized tests, as discussed in the preceding section. The TEMAS test was developed for Hispanic children and adolescents, and later expanded to include Blacks and Whites.

BACKGROUND: PROJECTIVE TESTS

Thematic apperception techniques and other traditional projective tests are based on the psychodynamic assumption that an individual projects onto ambiguous stimuli unconscious drives, which are ordinarily repressed (Murray, 1951). Early clinicians tended to place strong emphasis on the content analysis of the Thematic Apperception Test (TAT) stories in order to understand personality dynamics. However, with the advent of ego psychology, clinicians began to refocus their attention from the content of the *id* to the structure of the *ego*. Ego psychology posited that, whereas the *id* provided the energy to motivate behavior, the *ego* structure was responsible for the nature and direction of behavior. Consequently, there was a parallel shift in the analysis of TAT stories. The new emphasis focused primarily on the structure of the theme (how the story was told), and secondarily on the symbolic content of the story (what was told) (Bellak, 1954).

The highly cognitive nature of TAT stories was recognized in the early 1960s. Holt (1960a, 1960b), for example, argued that TAT stories are not fantasies or products of primary processes, but are, rather, cognition or products of conscious cognitive processes. Although he labeled TAT productions "fantasies," Kagan (1956) emphasized the importance of analyzing the *ego* defenses of the stories in addition to their symbolic content. Even earlier, Bellak (1954) had pointed out that TAT stories needed to be analyzed for both content and structure.

The emphasis on cognitive processes in projective testing was the natural progression of the theoretical development of behaviorism, which converged into the cognitive theories of the 1970s. There has been an impetus among some cognitive-behavioral psychologists to integrate the basic assumptions of *ego* psychology and cognitive psychology in the application of projective analyses (Anderson, 1981; Forgas & Shulman, 1979; Singer & Pope, 1978; Sobel, 1981). Interest in projective tests has been growing dramatically even among the cognitive psychologists. In fact, Sobel (1981) proposed the development of a "projective-cognitive" instrument to assess an individual's problem-solving strategies, coping skills, and self-instructional styles.

Traditionally in clinicians' analyses of responses to projective personality tests, Hispanic and Black children have been evaluated as being less verbally fluent, less behaviorally mature, and more psychopathological than their nonminority counterparts (Ames & August, 1966; Booth, 1966; Durrett & Kim, 1973). This is a particular problem because it has been widely acknowledged that the validity of projective techniques is impugned when administered to examinees who are verbally inarticulate (Anderson & Anderson, 1955; Reuman, Alwin, & Veroff, 1983). In contrast, minority children are articulate when tested with culturally sensitive instruments (Bailey & Green, 1977; Costantino & Malgady, 1983; Costantino, Malgady, & Vazquez, 1981; Thompson, 1949).

Nonetheless, projective tests have not fared equally well even with white children. Urging the development of new valid instruments, Gallager (1979) lamented that "We often curse the quality of the tools we have. But we are trapped by them." The research literature has also emphasized the need to develop psychological tests for reliable and valid diagnosis and personality assessment of minority children (Padilla, 1979) and to create culture-specific norms for projective tests (Dana, 1986a; Exner & Weiner, 1982).

Projective techniques, especially the Rorschach and the TAT, have been used to probe the cognitive, affective, and personality functioning of individuals from different cultural backgrounds. From early cross-cultural investigations using projective tests in the 1940s, it was observed that the TAT (Murray, 1943) stimuli had limited relevance to individuals of different cultures; hence, culturally sensitive TAT stimuli were developed to study such groups as Mexican Indians, Ojibwa Indians, Southwest Africans, and South Pacific Micronesians (Henry, 1955). However, such early efforts to provide a culture-specific and sensitive interpretive TAT framework have not been eagerly pursued by psychometricians (Dana, 1986a, 1986b).

More recently, the work of Monopoli (1984, cited in Dana, 1986a) indicated that culture-specific stimuli were necessary for personality assessment of unacculturated Hopi and Zuni Indians, whereas the Murray TAT was deemed more useful with acculturated individuals. Avila-Espada (1986) found that, following the development of an objective scoring system and norms, the standard TAT seems to have only a modest clinical utility for personality assessment of European Spaniards. Dana (1993b), moreover, strongly emphasizes that most personality tests are assumed to be genuine etic or culture general and universal in their assessment. Consequently, the use of an etic orientation with multicultural groups has erroneously minimized

cultural differences and hence has generated inappropriate inferences using Anglo-American personality constructs, thus creating unfavorable psychological test results and unfair clinical dispositions (Costantino, 1992, 1993; Dana, 1993a; Malgady, 1990, 1996). Dana (1993a) further emphasizes that a correct etic orientation needs to be used in order to demonstrate multicultural construct validity. He evaluates the TEMAS test, which was "developed to salvage the Thematic Apperception Test... as a landmark event for multicultural assessment because it provides a picture-story test that has psychometric credibility" (p. 10). In the same vein, Ritzler (1993) writes that TEMAS "represents a milestone in personality assessment. It also represents the first time a thematic apperception assessment technique has been published in the United States with the initial expressed purpose of providing valid personality assessment of minority subjects" (p. 381).

DEVELOPMENT OF TEMAS

Based on these considerations, the TEMAS test (which in English is an acronym for *Tell-Me-a-Story*, and in Spanish means *themes*) was developed as a multicultural thematic apperception test for use with Puerto Rican, other Hispanic, Black, and White children. TEMAS is different from previous thematic apperception tests in a number of ways: (1) The test was specifically developed for use with children and adolescents; (2) it has two parallel sets of stimulus cards, one set for minorities and another for nonminorities; (3) it has extensive normative data for both minorities and nonminorities; (4) it has an objective scoring system of both thematic content and structure; and (5) the TEMAS pictures embody the following features: (a) structured stimuli and diminished ambiguity to pull for specific personality functions; (b) chromatically attractive, ethnically and racially relevant and contemporary stimuli to elicit diagnostically meaningful protocols; and (c) representation of both negative and positive intrapersonal and interpersonal functions in the form of conflicts that require a solution (resolution of conflict or problem solving) (Costantino, 1987; Costantino, Malgady, & Rogler, 1988).

THEORETICAL FRAMEWORK

The principal rationale for the development of TEMAS was the acknowledged need for a psychometrically sound and multicultural thematic apperception test designed specifically for use with children and adolescents. It can be used normatively with children and adolescents aged 5 to 13 and used clinically with children and adolescents aged 5 to 18.

The theory underlying TEMAS incorporates the dynamic-cognitive framework, which states that personality development occurs

within a sociocultural system. Within this system, individuals internalize the cultural values and beliefs of family and society (Bandura & Walters, 1967). Personality functions are learned initially through modeling (Bandura, 1977) and are then developed through verbal and imaginal processes (Paivio, 1971; Piaget & Inhelder, 1971). When a test's projective stimuli are similar to the circumstances in which the personality functions were originally learned, these functions are readily transferred to the testing situation and are projected into the thematic stories (Auld, 1954). Moreover, personality is a structure comprising a constellation of motives that are learned and internalized dispositions and that interact with environmental stimuli to determine overt behavior in specific situations. Because these dispositions are not directly observable in clinical evaluation, projective techniques prove to be useful instruments in probing beneath the overt structure or "phenotype" of the personality, thereby arousing the latent motives imbedded in the personality "genotype." Hence it is assumed that projective tests assess relatively stable individual differences in the strength of underlying motives, which are expressed in narrative or storytelling. Atkinson (1981) emphasizes that the analysis of narrative (thematic content) has a more solid theoretical foundation than ever before and "remains the most important and virtually untapped resource we have for developing our understanding of the behavior of an animal distinguished by its unique competence in language and use of symbols" (p. 127).

THE STIMULUS CARDS

The settings, characters, and themes were created by Costantino (1978), and the art work was rendered by Phil Jacobs, an artist who worked closely with the author. Several hundred pictures were drawn before the 23 standardized pictures were selected (see section on Standardization).

There are two parallel versions of TEMAS pictures: the minority version consisting of pictures featuring predominantly Hispanic and African-American characters in an urban environment, and the nonminority version consisting of corresponding pictures showing predominantly White characters in an urban environment. The various personality functions depicted in the two parallel sets of pictures present identical themes.

Both the minority and nonminority versions have a Short Form comprising 9 cards from the 23-card Long Form. Of the 9 Short Form cards, 4 are administered to both genders and 5 are gender-specific. Of the 23 Long Form cards, 12 are for both genders, 11 are gender-specific, and 1 is age-specific. Furthermore, there are 4 cards with

pluralistic characters, which can be used interchangeably for both the minority and nonminority versions (Cards 15, 16, 20, and 21).

THE TEMAS MEASURES

Cognitive Functions. There are 18 Cognitive Functions that can be scored for each TEMAS protocol:

Reaction Time (RT); Total Time (TT); Fluency (FL); Total Omissions (OM); Main Character Omissions (MCO); Secondary Character Omissions (SCO); Event Omissions (EO); Setting Omissions (SO); Total Transformations (TRANS); Main Character Transformations (MCT); Secondary Character Transformations (SCT); Event Transformations (ET); Setting Transformations (ST); Inquiries (INQ); Relationships (REL); Imagination (IMAG); Sequencing (SEQ); and Conflict (CON).

Personality Functions. Nine Personality Functions are also assessed by TEMAS. Each stimulus card pulls for at least one of the following Personality Functions:

Interpersonal Relations (IR); Aggression (AGG); Anxiety/Depression (A/D); Achievement Motivation (AM); Delay of Gratification (DG); Self-Concept (SC); Sexual Identity (SEX); Moral Judgment (MJ); Reality Testing (REAL).

Affective Functions. Finally, the TEMAS scoring system evaluates seven Affective Functions:

Happy (HAP); Sad (SAD); Angry (ANG); Fearful (FEAR); Neutral (NEUT); Ambivalent (AMB); Inappropriate Affect (IA).

EXAMINER QUALIFICATIONS

In testing culturally, linguistically, and ethnically/racially diverse children, examiners should be fluent in the language in which the examinee is dominant and should have knowledge of the cultural and ethnic/racial heritage of the youngster being tested (Costantino, Malgady, & Rogler, 1988; Dana, 1993; Fuchs, 1986).

Administration

The TEMAS test is administered individually. The examiner reads the same instructions and inquiries to all children. After having initiated a working relationship with the child, the examiner says:

"I would like you to tell me a story. I have several interesting pictures that I'm going to show you. Please look carefully at the

people and the places in the pictures and then tell me a complete story about each picture—a story that has a beginning and an end.”

Two types of instructions may be used by the examiner: Temporal Sequencing and Structured Inquiries.

Temporal Sequencing

The examiner shows the first picture to the child and says: “Please tell me a complete story about this picture and all the other pictures I will show you. The story should answer three questions:

1. What is happening in the picture now?
2. What happened before?
3. What will happen in the future?

Following these instructions, the child engages in spontaneous storytelling, during which the examiner may ask clarifying questions which are not part of the structured inquiries.

Structured Inquiries

Once the child has ended his/her spontaneous storytelling, the examiner makes any of the following inquiries for information that is missing from the narrative.

- Inquiry 1. a) Who are these people?
b) Do they know each other?
- Inquiry 2. a) Where are these people?
b) Where is this person?
- Inquiry 3. a) What are these people doing and saying?
b) What is this person doing and saying?
- Inquiry 4. a) What were these people doing before?
b) What was this person doing before?
- Inquiry 5. a) What will these people do next?
b) What will this person do next?
- Inquiry 6. a) What is this person (main character) thinking?
b) What is this person (main character) feeling?

Recording Time

A stopwatch (or digital watch) is needed for recording administration time accurately. Normative data have been collected on *reaction time (RT)* (latency time between the handing of the card to the child and the beginning of the story) and *total time (TT)* (the time the child has taken to complete the story, including the time taken by the examiner to make the structured inquiries). The examiner may record

spontaneous time (ST), which is the time during which the child has told the story spontaneously, just before the structured inquiries.

SCORING

TEMAS protocols are scored on a detailed record booklet; each story is scored separately for cognitive, affective, personality functions. The 18 Cognitive Functions are scored in the following way: *Reaction Time* is scored in seconds; *Total Time* in minutes and seconds; *Fluency* is indicated by the number of words per story; *Conflict* is scored 1 if it is not recognized and blank if it is recognized; *Sequencing* is scored 1 if it is omitted and blank if it is recognized; *Imagination* is scored 1 if the narrative is stimulus bound and blank if it abstracts beyond the stimulus; *Relationships* is scored 1 if it is recognized and blank if it is not recognized; *Inquiries* are scored 1 if they are unanswered and blank if they are all answered; *Omissions* and *Transformations* are scored in accordance with the number of omissions and transformations of *Main Character*, *Secondary Character*, *Event*, and *Setting*.

All affective functions (e.g., *Happy*, *Sad*, *Angry*) are scored 1 if they are present in the narrative and left blank if they are not mentioned. (Please note that the 1/0 values are dichotomous scores.) Personality functions are scored on a Likert-type 4-point rating scale, with "1" representing the most maladaptive resolution of the conflict and "4" the most adaptive. A personality function is scored as "N" when the particular function it represents cannot be scored. In accordance with the Sullivanian construct of *selective inattention* (Sullivan, 1953), this N-scoring has been found to discriminate between attention deficit disordered children (Costantino, Malgady, Rogler, & Tsui, 1988; Costantino, Malgady, Colon-Malgady, & Bailey, 1992).

A score of "1" for any personality function indicates a highly maladaptive resolution for a particular card. For example, references to murder, rape, and assault are scored "1" for *Interpersonal Relations*, *Aggression*, and *Moral Judgment*. A suicidal theme earns a "1" under the *Anxiety/Depression* function. The decision to drop out of school or steal rather than work results in a "1" for *Achievement Motivation* and *Delay of Gratification*. The anticipation of complete failure and concomitant refusal to attempt a given task results in a "1" for *Self Concept of Competence*. A character who changes gender or rejects his or her gender earns a "1" in *Sexual Identity*. Scores of "1" in *Moral Judgment* reflect a total lack of regard for the consequences of antisocial behavior. Severely impaired reality testing would be scored only for the most bizarre and impossible resolutions (e.g., inanimate objects come

alive and kill; a child causes harmful events to occur by a strange power of the mind). A score of "2" for any personality function reflects a moderately maladaptive resolution. Examples of such resolutions are: children cheat and get away with it; a conflict is resolved by fighting; money is squandered rather than saved; homework is avoided in favor of play; a child runs away from home and never returns; the monster in a dream could also be in the backyard. A score of "3" represents a partially adaptive resolution. Examples of such resolutions are: children who cheat are caught and punished; fighting ceases in favor of compromise; money is saved for a time and then spent; homework is grudgingly completed; a runaway child returns home. A score of "4" represents a highly adaptive resolution. The child must perceive the intended conflict and solve the problem in a mature, age-appropriate manner. A score of "4" implies a striving for the greater good, a sense of responsibility, and an intrinsic motivation. Examples of such resolutions are: a child rejects the notion of cheating as contrary to learning; conflicts are discussed and a compromise is reached; money is saved for the future; home work is completed because good grades are valued; a child decides to talk to parents rather than run away; dreams are never real.

STANDARDIZATION

Standardization Sample

TEMAS was standardized on a sample of 642 children (281 males and 361 females) from public schools in the New York City area. These children ranged in age from 5 to 13 years, with a mean age of 8.9 years ($SD = 1.9$). The total sample represented four ethnic/racial groups: Puerto Ricans and other Hispanics, Blacks, and Whites.

Data on the socioeconomic status (SES) of the standardization sample indicate that these subjects were from predominantly lower- and middle-income families.

ADMINISTRATION PROCEDURES FOR INSTRUMENT STANDARDIZATION

TEMAS was administered to each subject, with 23 cards presented in random order by an examiner of the same ethnic/racial background as the examinee. All subjects were tested individually by graduate psychology students in sessions conducted in the public schools. After developing a rapport with each child, the examiner administered the TEMAS according to the instructions described above. Examinees subsequently responded by telling a story about each picture for typically 2 to 5 minutes; the responses were recorded

verbatim by the examiner. Hispanic examinees were tested by bilingual Hispanic examiners in the examinee's dominant language. In the case of Hispanic examinees who responded in Spanish, stories were translated into English for scoring. Protocols were scored according to administration instructions. Black examinees were tested by Black examiners, and White examinees by White examiners.

QUANTITATIVE SCALES AND QUALITATIVE INDICATORS

The nature of the distribution of some TEMAS functions made it impractical to convert them to standard scores, because scores other than zero were rare in the standardization sample. These functions were designated "Qualitative Indicators." The TEMAS functions that had relatively normal distributions were designated "Quantitative Scales."

STRATIFICATION OF THE STANDARDIZATION SAMPLE

In the standardization sample, significant correlations of low magnitude were found between age and many of the TEMAS functions. Correlations ranged from .01 to $-.52$ (see Table 1). Although these correlations are small, it is believed that they reflect real developmental trends in children's cognitive, affective, and personality functioning. Thus, in order to accommodate the effects of these trends, while still retaining respectable sample sizes, age was collapsed into three age-range groups: 5-to-7-year-olds, 8-to-10-year-olds, and 11-to-13-year-olds.

For each of the 17 Quantitative Scales, three-way analyses of variance (ANOVAs) were computed by age, ethnic/racial background, and gender of the standardization sample. The three-way interaction terms were not significant for any of the quantitative functions. The two-way interactions between gender and age were also nonsignificant for these scales. However, the two-way interaction of sex and ethnic/racial background was significant for one of the 17 Quantitative Scales—(*Sexual Identity*). However, given the number of hypotheses tested, this result may be attributable to chance.

There were no significant main effects of gender for any of these functions. This result is consistent with the results of other studies that have investigated the effects of gender on TEMAS functions.

Short Form. Means and standard deviations for the Short Form were derived by extracting the scores of the 9 cards from the 23-card protocols of the standardization sample. The correlations between the 23-card Long Form of TEMAS and the 9-card Short Form for each function were computed separately for the total sample and for each ethnic/racial group (see Table 2). The correlation between the Long

Table 1. Correlations of TEMAS Indices with Age.

	Hispanic	Black
Cognitive Function		
Reaction Time	.00	.22
Total Time	.11	.01
Fluency	.18	.20
Total Omissions	-.23	-.11
Total Transformations	-.17	-.52*
Inquiries	-.13	-.25
Main Character Omissions	-.17	-.19
Main Character Transformations	-.14	-.35*
Secondary Character Omissions	-.01	-.24
Secondary Character Transformations	-.12	-.40*
Event Omissions	-.13	-.11
Event Transformations	-.05	—
Setting Omissions	-.31*	.00
Setting Transformations	-.19	-.37*
Conflict	-.21	-.18
Sequencing	-.11	-.38*
Imagination	-.14	-.31*
Relationships	-.20	-.39*
Personality Function		
Interpersonal Relations	-.21	.17
Aggression	-.26*	.02
Anxiety/Depression	-.18	.34*
Achievement Motivation	.02	.23
Delay of Gratification	.07	.20
Self-Concept	-.05	.10
Sexual Identity	-.34*	.29
Moral Judgment	.05	.12
Reality Testing	-.10	.18
Affective Function		
Happy	.16	-.12
Sad	-.28*	.08
Angry	.08	.13
Fearful	.12	.04
Neutral	.00	-.29
Ambivalent	.00	.12
Inappropriate Affect	-.09	-.05

^a $n = 115$ (73 Hispanics, 42 Blacks).

^b Father SES, $n = 54$ Hispanics, 27 Blacks.

^c Mother SES, $n = 69$ Hispanics, 39 Blacks.

* $p < .05$.

Table 2. Correlation Between TEMAS Long and Short Forms

Function	White Sample		Puerto Rican Sample		Other Hispanic Sample		Black Sample	
	<i>N</i>	<i>r</i>	<i>N</i>	<i>r</i>	<i>N</i>	<i>r</i>	<i>N</i>	<i>r</i>
Quantitative Scale								
Reaction Time	87	.95	117	.95	84	.94	113	.96
Total Time	124	.97	122	.98	84	.97	114	.99
Fluency	123	.98	125	.97	86	.97	113	.97
Total Omissions	172	.72	164	.70	93	.81	206	.74
Interpersonal Relations	143	.95	164	.87	45	.99	206	.91
Aggression	136	.92	164	.96	38	.99	206	.95
Anxiety/Depression	171	.90	151	.84	100	.83	206	.89
Achievement Motivation	172	.79	163	.79	100	.81	203	.88
Delay of Gratification	163	.89	161	.87	84	.82	203	.96
Self-Concept	166	.82	155	.70	98	.77	193	.82
Sexual Identity	145	.69	76	.86	86	.80	127	.90
Moral Judgment	158	.81	163	.78	90	.64	197	.73
Reality Testing	171	.75	125	.84	100	.66	206	.83
Happy	172	.87	163	.81	94	.96	206	.71
Sad	172	.82	163	.79	94	.94	206	.72
Angry	172	.77	163	.84	94	.87	206	.77
Fearful	171	.88	163	.83	94	.88	206	.80
Qualitative Indicator								
Neutral	171	.86	163	.86	94	.86	206	.91
Ambivalent	171	.72	163	.61	94	.79	206	.94
Inappropriate Affect	171	.77	163	.39	94	.86	206	.74
Conflict	172	.77	163	.80	100	.82	206	.91
Sequencing	172	.82	163	.57	100	.79	206	.57
Imagination	172	.82	163	.97	96	.84	206	.65
Relationships	172	.62	163	.76	94	.75	206	.59
Total Transformations	172	.76	164	.80	96	.72	206	.71
Inquiries	172	.87	162	.04	98	.66	206	.72
Main Character Omissions	172	.64	164	.82	95	.79	206	.95
Secondary Character Omissions	172	.78	164	.75	98	.78	206	.80
Setting Omissions	172	.69	164	.65	100	.60	206	.64
Event Omissions	172	.68	164	.66	100	.87	206	.63
Main Character Transformations	172	.47	164	.57	96	.63	206	.55
Secondary Character Transformations	172	.60	164	.68	100	.65	206	.34
Setting Transformations	172	.66	164	.94	100	.76	206	.61
Event Transformations	172	.83	164	.73	100	.72	206	.70

Form and the Short Form was uniformly high across samples. The median correlation between forms was .81 for the Total Sample, .82 for Whites, .80 for Blacks, .80 for Puerto Ricans, and .81 for other Hispanics.

DERIVATION OF STANDARD SCORES

To enable users to directly compare scores within a single protocol, and to facilitate comparisons with the performance of the standardization sample, raw scores of Quantitative Scales were converted to normalized *T*-scores. To minimize irregularities in the raw score distribution, an analytic smoothing technique was also used (Cureton & Tukey, 1951).

Because it was inappropriate to transform raw scores of the Qualitative Indicators to standard scores, critical levels based on the raw score distributions have been developed, based on expert clinical opinion. Because the critical levels are based on expert clinical evaluation, the Qualitative Indicators should be named Clinical Indicators.

RELIABILITY

Internal Consistency

In this context, internal consistency refers to the degree to which individual TEMAS cards are interrelated in measuring particular functions.

Long Form. Internal consistency reliabilities of the TEMAS functions were derived using a sample of 73 Hispanic and 42 Black children (see Table 3). The internal consistency reliability coefficients for the Hispanic sample ranged from .41 for *Ambivalent*, an affective function, to .98 for *Fluency*, a cognitive function, and had a median value of .73. For the Black sample, coefficients ranged from .31 for *Setting Transformations* to .97 for *Fluency*, with a median of .62.

Reaction Time, Fluency, and Total Time demonstrated high levels of internal consistency in both the Hispanic and Black samples. However, in general, *Omissions* and *Transformations* of perceptual details (*Main Character, Secondary Character, Event, and Setting*) had lower magnitudes of internal consistency than other TEMAS functions in both samples. This may be attributable to the fact that these two functions, being clinical scales, tend to occur less frequently, in nonclinical children (Costantino, Colon-Malgady, Malgady, & Perez, 1991). The internal consistency reliabilities for *Omissions* and *Transformations* were uniformly lower for Blacks than for Hispanics.

Conflict, Imagination, and Relationships demonstrated moderate-to-high internal consistency reliability in both ethnic/racial groups. The

alpha coefficient for *Sequencing*, a cognitive function, was moderately high in the Hispanic sample but low in the Black sample. With respect to affective functions, reliability estimates in the Hispanic sample were highest for *Happy*, *Sad*, *Angry*, and *Fearful*, whereas in the Black sample, the highest reliability was evident for *Sad*, *Angry*, *Neutral*, and *Ambivalent*.

With respect to personality, pictures pulling for *Interpersonal Relations*, *Aggression*, and *Moral Judgment* showed the highest levels of internal consistency in the Hispanic sample, whereas *Anxiety/Depression*, *Achievement Motivation*, *Delay of Gratification*, *Self-Concept*, *Sexual Identity*, and *Reality Testing* had low-to-moderate reliability. For Blacks, alphas were again uniformly lower than for Hispanics, with the highest reliabilities associated with *Aggression* and *Moral Judgment*. Low reliabilities for the personality functions may be due partially to the fact that personality function scores are based on relatively few TEMAS cards.

The coefficient alphas for the standardization sample, differentiated by ethnic/racial group membership for the Long Form, were, for the most part, in the moderate range, with a median alpha of .83 for the Quantitative Scales for the Total Sample. On these functions, the median reliability ranged from .80 for Black children to .69 for other Hispanic children. On the Short Form, alphas were generally lower, with a median reliability of .68 for the Total Sample on the Quantitative Scales. Reliability coefficients for ethnic/racial groups on these functions ranged from a median coefficient of .65 for the White sample to .54 for the Black sample. Reliability coefficients on the Qualitative Indicators were lower, due, in large part, to the nonmetric nature of the scoring system used with these scales.

TEST-RETEST RELIABILITY (SHORT FORM)

Test-retest stability of the TEMAS functions was computed for the Short Form by correlating the results of two administrations, separated by an 18-week interval. The sample used in this study consisted of 51 subjects chosen at random from the 210 Puerto Rican students screened for behavior problems. Results indicated that TEMAS functions exhibited low-to-moderate stability over an 18-week period (see Table 3). The eight TEMAS functions with significant test-retest correlations were *Fluency*, *Event Transformations*, *Conflict*, *Relationships*, *Happy*, *Ambivalent*, *Anxiety/Depression*, and *Sexual Identity*. Two explanations for the generally low level of test-retest reliability have been proposed. First, test-retest correlations may be lower-bound estimates of reliability in this case because different raters were

Table 3. Internal Consistency (Alpha) Reliability and Test-Retest (*r*) Reliability over 18-week Interval.

	Hispanic	Black	<i>N</i>	<i>r</i>
Cognitive Function				
Reaction Time	.95	.92	50	.17
Total Time	.98	.97	50	.06
Fluency	.98	.97	50	.45
Total Omissions	.80	.75	50	.13
Total Transformations	.64	.45	51	.05
Inquiries	.82	.51	51	.27
Main Character Omissions	.76	.59	51	.04
Main Character Transformations	.52	—	51	-.05
Secondary Character Omissions	.65	.56	51	-.06
Secondary Character Transformations	.77	.36	51	-.07
Event Omissions	.74	.72	51	.27
Event Transformations	.48	—	51	.46
Setting Omissions	.75	.60	51	.15
Setting Transformation	.55	.31	51	-.08
Conflict	.69	.83	51	.53
Sequencing	.82	.46	51	-.01
Imagination	.98	.75	51	.11
Relationships	.75	.68	51	.39
Personality Function²				
Interpersonal Relations (16)	.92	.62	50	.24
Aggression (8)	.84	.78	50	.16
Anxiety/Depression	.50	.49	50	.45
Achievement Motivation	.65	.52	48	.11
Delay of Gratification (4)	.45	.45	50	.17
Self-Concept (4)	.59	.45	45	-.07
Sexual Identity (3)	.58	.63	33	.38
Moral Judgment	.72	.70	49	.07
Reality Testing	.56	.44	49	.21
Affective Function				
Happy	.86	.67	51	.35
Sad	.89	.79	51	.15
Angry	.76	.77	51	-.04
Fearful	.82	.50	51	.25
Neutral	.50	.84	51	-.03
Ambivalent	.41	.77	51	.45
Inappropriate Affect	—	—	—	

²The number of pictures pulling each function is indicated in parenthesis.

employed at pre- and post-testing. Therefore, they include error variance due to interrater reliability. Second, the indicators of this instrument have limited range and hence, the correlation may be attenuated.

INTERRATER RELIABILITY

The protocols of 27 Hispanic and 26 Black children were drawn at random from the sample of 73 Hispanics and 42 Blacks described previously in the section on internal consistency of the Long Form. Each protocol was scored independently by two raters. These scores were then correlated to estimate the degree to which the two raters agreed in their scoring of a particular picture for a given TEMAS Personality Function.

Interrater reliabilities in scoring *Total Omissions* and *Transformations* are generally moderate-to-high for both the Hispanic and the Black protocols (see Table 4). Little difference is evident as a function of ethnic/racial group. Raters generally showed greater agreement in scoring Omissions than Transformations. Although illogical synthesis and integration of ideas regarding resolution of *Conflict*, *Sequencing*, *Imagination*, and *Relationships* generally occurred rarely in both samples, available estimates of correlations are suggestive of moderate-to-high interrater agreement.

For the Affective Functions, the pattern of correlation between raters is generally high, with no substantive differences between the Hispanic and Black samples. With respect to the Personality Functions, correlations are low-to-moderate for Reality Testing and Sexual Identity in the Hispanic sample and substantially higher for the remaining functions. Contrary to the pattern of internal consistency reliability estimates, the interrater reliabilities obtained for Hispanics are generally higher than for the Black sample.

Interrater reliability was also estimated in a recent study of the nonminority version of the TEMAS Short Form (Costantino, Malgady, Casullo, & Castillo, 1991). Two experienced clinical psychologists (one with extensive training in scoring TEMAS and the other a newly trained scorer) independently rated 20 protocols. The results of this study indicated a high interrater agreement in scoring protocols for Personality Functions, ranging from 75%–95%. The mean level of interrater agreement was 81%, and in no cases were the two independent ratings different by more than one-rating scale-point.

It is important to clarify that whereas the interrater agreement for Personality Functions in the first interrater reliability study ranged from 31%–100%, in the recent study, the interrater agreement ranged

Table 4. Interrater Reliabilities For Hispanic and Black Samples ($N = 27$) across 23 TEMAS Cards.

Function	Hispanic Sample		Black Sample	
	Range r	Median r	Range r	Median r
Cognitive				
Omissions	.54–1.00	.82	.33–1.00	.87
Transformations	.32–.95	.69	.37–1.00	.80
Congruence	.47–1.00	.80	.42–1.00	.69
Affective				
Happy	.70–1.00	.87	.70–1.00	.92
Sad	.70–1.00	.85	.65–1.00	.85
Angry	.55–1.00	.85	.46–1.00	.85
Fearful	.61–1.00	1.00	.40–1.00	.78
Neutral	.30–1.00	.84	.40–1.00	.75
Ambivalent	.55–1.00	.75	.68–1.00	.78
Personality				
Interpersonal Relations	.27–.80	.63	.40–.88	.62
Aggression	.35–.81	.50	.54–.87	.73
Anxiety/Depression	.43–.73	.52	.33–.85	.58
Achievement Motivation	.20–.65	.51	.41–.80	.59
Delay Gratification	.53–.58	.56	.40–.87	.54
Self Concept	.59–.84	.65	.38–.73	.59
Sexual Identity	.32–.36	.34	.66–.87	.76
Moral Judgment	.44–1.00	.80	.31–1.00	.69
Reality Testing	.32–.60	.39	.74–.83	.75

from 75%–95%. The explanation for this discrepancy is that during the first study, which was conducted in 1983, the TEMAS scoring system was still undergoing changes, whereas in the second study, which was conducted in 1987, the scoring system and the instructions were completely formulated.

CONTENT VALIDITY

TEMAS pictures were designed to “pull” for specific Personality Functions based upon the nature of the psychological conflict represented in each picture. As previously described in the “Scoring” section, all TEMAS pictures are scored for at least two and not more than four Personality Functions. A study was conducted to assess the concordance among a sample of practicing school ($N = 8$) and clinical

($N = 6$) psychologists regarding the pulls of each TEMAS picture for specific Personality Functions. Six of the psychologists were at the doctorate level and eight had received their Master's degrees; they ranged in age from 24 to 54 ($M = 36.57$, $SD = 7.53$). They had a mean of 8.64 years ($SD = 6.53$) of experience in testing and/or counseling minorities, and a mean of 7.79 years ($SD = 5.36$) of experience with projective techniques. With respect to ethnicity, seven were White, one was Black, and six were Hispanic. The clinical orientations of the psychologists in this sample included eclectic, psychoanalytic, cognitive, and ego psychology.

The psychologists were presented the TEMAS pictures in random order and were asked individually to indicate which, if any, of the nine functions were pulled by each picture. The percentage of agreement among the 14 clinicians revealed surprisingly high agreement (71%–100%) across the pictures, thus confirming the pulls scored for specific Personality Functions.

RELATIONSHIP TO OTHER MEASURES

A group of 210 Puerto Rican children screened for behavior problems were administered a number of measures along with the TEMAS, and their adaptive behavior in experimental role-playing situations was observed and rated by psychological examiners. The measures administered included: the Sentence Completion Test of Ego Development (SCT; Loevinger & Wessler, 1970) or its Spanish version (Brenes-Jette, 1987); the Trait Anxiety Scale of the State-Trait Anxiety Inventory for Children (STAIC; Spielberger, Edwards, Lushene, Montuori, & Platzek, 1973) or its Spanish version, *Inventario de Ansiedad Rasgo-Estado Para Niños* (Villamil, 1973); the Teacher Behavior Rating scale (TBR; Costantino, 1980) (described in subject screening), and the parallel Mother Behavior Rating Scale (MBR; Costantino, 1980) in both English and Spanish. Finally, the children participated in four experimental role-playing situations, designed to elicit adaptive behavior.

Results of the regression analyses indicated that TEMAS profiles significantly predicted ego development (SCT), $R = .39$, $p < .05$; teachers' behavior ratings (TBR), $R = .49$, $p < .05$; delay of gratification (DG), $R = .32$, $p < .05$; self-concept of competence (SCC), $R = .50$, $p < .05$; disruptive behavior (DIS), $R = .51$, $p < .05$; and aggressive behavior (AGG), $R = .32$, $p < .05$. However, the multiple correlation for predicting trait anxiety was not significant. TEMAS functions accounted for between 10% (for DG and AGG) and 26% (for DIS) of the variability in scores on the criterion measures.

Predictive validity was established using hierarchical multiple regression analysis to assess the utility of TEMAS profiles for predicting post-therapy scores ($N = 123$) on the criterion measures, independent of pretherapy scores. In the first step of the hierarchy, the pretherapy score on a given criterion measure was entered into the regression equation, followed in the second step by a complete TEMAS pretherapy profile. Results of these analyses showed that pretherapy TEMAS profiles significantly predicted all therapeutic outcomes, ranging from 6% to 22% variance increments, except for observation of *Self-Concept of Competence*. Outcome measures were the Sentence Completion Test of Ego Development (14%); Trait Anxiety Inventory for Children (22%); Conner's Behavior Rating Scale (6%); and observational tasks measuring delay gratification (20%); disruptive behavior (17%); and aggression (14%).

PSYCHOMETRIC STUDIES

Several other studies have been conducted on TEMAS; here we summarize the most prominent ones. The first study of the TEMAS research (Costantino, Malgady, & Vazquez, 1981) was conducted in 1980 with 72 Hispanic children in fourth and fifth grades attending public schools in New York City. This study assessed the responsiveness of the Hispanic examinees to TAT and TEMAS. Results indicated that the examinees were more verbally fluent to TEMAS pictures than TAT pictures, and this effect was more pronounced for females than males. Furthermore, the children were more likely to respond in Spanish to TEMAS and to switch from English on the TAT to Spanish on TEMAS. Results supported earlier findings of increased responsiveness of minority children to culturally relevant stimuli, and also suggested a promising instrument for assessment of Hispanic children.

The second study (Costantino & Malgady, 1983) compared Hispanic, Black, and White children on the TAT and TEMAS. Seventy-two Hispanic, 41 Black, and 43 White examinees in grades K-6 were administered the minority version of TEMAS (depicting Hispanic and Black characters), the nonminority version of TEMAS (depicting White characters), and the TAT. Results indicated that females were more fluent than males; Hispanics and Blacks were more verbally fluent on both TEMAS tests compared to the TAT; but only Hispanics were less fluent than Whites on the TAT. Attending to effect size, however, the pattern of standardized differences suggested small convergent and discriminant effects, as ethnic minorities were more fluent on the minority version of TEMAS, whereas Whites were more fluent on the nonminority version of TEMAS.

The third study investigated the psychometric properties of TEMAS (Minority version) (Malgady, Costantino, & Rogler, 1984). The TEMAS test was administered to 73 public school and 210 clinical Puerto Rican children of low socioeconomic status in grades K–6. TEMAS protocols were scored for personality, cognitive, and affective functions. Results indicated internal consistency and interrater reliability in scoring TEMAS stories, and TEMAS indices significantly discriminated between public school and clinical samples.

The fourth study investigated the clinical utility of TEMAS by discriminating public school and clinical Hispanic and Black children (Costantino, Malgady, Rogler, & Tsui, 1988). The examinees were 100 outpatients at psychiatric centers and 373 public school students, all from low SES, inner-city families. All subjects were tested individually by examiners of their same ethnicity. Results indicated that TEMAS profiles significantly ($p < .001$) discriminated the two groups and explained 21% of the variance independent of ethnicity, age, and SES. Classification accuracy, based on the discriminant function, was 89%. The TEMAS profiles interacted with ethnicity; better discrimination was evident for Hispanics than African-Americans.

The fifth study endeavored to assess attention deficit by utilizing the scores of selective attention (Costantino, Colon-Malgady, & Perez, 1991). Attention deficit-hyperactivity disorder (AD-HD) is regarded as being relatively common among school-age children, but the literature reveals a number of confounding factors with standard assessment techniques of the disorder. Using TEMAS to measure attention to pictorial stimuli depicting characters, events, settings, and covert psychological conflicts, a study was conducted with 152 normal and 95 clinical Hispanic, Black, and White school-age children. Results revealed that the AD-HD children were significantly more likely than normal children to omit information in the stimuli about characters, events, settings, and psychological conflicts. Differences between the groups were large and persistent in the presence of structured inquiries made by the test examiners. Results suggested the potential utility of structured thematic apperception techniques for the assessment of AD-HD, eventually to facilitate DSM-III-R diagnosis, but users are also invited to give closer scrutiny in carefully controlled validity studies.

The focus of a sixth study was the cross-cultural standardization of TEMAS in three Hispanic cultures (Costantino, Malgady, Casullo, & Castillo, 1991). This research compared the normative profiles, the reliability, and the criterion-related validity of TEMAS with school and clinical children from three different Hispanic cultures: Puerto Ricans in New York City; natives of San Juan, Puerto Rico; and South

Americans in Buenos Aires, Argentina. Children in New York and Puerto Rico were administered 23 minority TEMAS cards, the Spielberger Trait-Anxiety Scale for Children, and the Piers-Harris Children's Self-Concept Scale. Argentinean children were administered 10 TEMAS cards (the nonminority short form) and the Piers-Harris scale. Results of the study supported the use of TEMAS with examinees in the three cultures. However, it also indicated that the original card 15 (depicting "a policeman awarding a group of PAL baseball players and a policeman arresting a group of three boys and one girl who have broken a window and stolen merchandise") was biased towards the Argentinean children. These children scored lower than the other two Hispanic groups in *Moral Judgment* in this card, for they tended to perceive the baseball players as having also stolen the awards. Analysis of the results indicated that the Argentinean children tended to attribute wrong doing to the baseball players because of the presence of the policeman, who apparently was perceived as a punitive agent because of the experience of these children during the military regime. (The study was conducted in 1984-85.) In addition, the card was perceived as culturally relevant because soccer and not baseball is the national sport in Argentina. (Card 15 in the nonminority version has been modified to show a coach giving awards to a group of soccer players.)

The focus of the seventh study (Costantino, Malgady, Colon-Malgady, & Bailey, 1992) was to investigate the validity of the nonminority version by discriminating between public school ($n = 49$) and outpatient ($n = 36$) samples of White examinees from inner city, low to lower middle SES, largely female-headed households. Results indicated that TEMAS profiles significantly discriminated between the normal functioning and clinical groups ($p < .001$), with 86% classification accuracy.

The aim of the eighth study, which is still in progress, was to establish the clinical utility of TEMAS in relation to predicting DSM-III-R. Hispanic school-age children are affected by low SES, cultural adjustment issues, and bilingualism, which place them at high risk for special education; however, their overrepresentation in special education classrooms appears to be also associated with biased cognitive and clinical assessments and biased intelligence and personality tests. Preliminary data analyses conducted with 45 (of the 80) Hispanic school-age children attending two major mental health centers showed levels of agreement ranging from .73 to .92 between TEMAS scores and classification of clinical examinees into their target diagnostic categories (Costantino & Malgady, 1993).

The ninth study endeavored to assess the cultural sensitivity of TEMAS (Bernal, 1991). Research assessing the appropriateness of

projective instruments utilized with ethnic minority populations is scarce and traditionally such research has overlooked acculturation issues. The purpose of the study was to describe the relationship between acculturation level and two popular thematic tests: the Robert's Apperception Test for Children (RAT-C) and TEMAS. Participants were 40 (24 females and 16 males) Mexican-American and Anglo-American children in grades 4 through 7 who were between the ages of 10 and 12. This study utilized a nonexperimental cross-sectional design to test seven research hypotheses. The Vineland Adaptive Behavior Scales Survey Form or Classroom Edition was utilized to define examinee well-adjustment, and the System of Multicultural Pluralistic Assessment (SOMPA) Urban Acculturation Scale was utilized to define acculturation level. Results pointed out that whereas the TEMAS seemed to be a more culturally sensitive instrument in assessing Mexican-Americans than the RAT-C, both the RAT-C and the TEMAS seemed to be valid instruments for assessing personality functioning among Anglo-American children.

The tenth study constitutes a pioneer attempt to use the TEMAS projective test as therapeutic stimuli, thus linking assessment to treatment. Hispanic children were treated in this study by a culturally sensitive storytelling intervention. Inner-city, 9-13 year olds ($N = 90$) were screened for symptomatology by structured interview (Child Assessment Schedule-CAS), randomly assigned to an 8-week TEMAS intervention or attention-control group, and pre- and post-tested with standardized instruments (CED and STAIC). (The TEMAS test in this study was used *only* as therapeutic stimuli, not as an assessment instrument.) Results indicated significant improvement in anxiety, depression and phobic symptomatology, and school conduct based on the use of TEMAS pictures as therapeutic stimuli (Costantino, Malgady, & Rogler, 1994).

The next section presents three case studies that illustrate the clinical application of the TEMAS test in school and clinic settings. The cases presented include presenting problem, family history, results of TEMAS and other psychological evaluations, how TEMAS facilitated the assessment, and some exemplary stories told by the children.

CLINICAL UTILITY: CASE STUDIES

Case Study 1

The first (school) case illustrates the utility of TEMAS, which was administered together with WISC-III, the Bender-Gestalt Test, and the H-T-P test, in assessing the strengths and weaknesses of a 6-

year-old Hispanic student. Referred for possible placement in Special Education classes, the student was recommended to remain in regular classes, following positive results on both the WISC-III and TEMAS.

Psychological Testing Report

Name: Roberto	Language Dominance: English/Spanish
DOB: 11/11/86	Testing Language: English/Spanish
DOT: 4/30/93	Grade: 1st

Reason for Referral

Roberto is a 6-year-5-month-old Hispanic student who is attending first grade in regular classes. According to his teacher's report, he was experiencing academic problems and, at times, exhibited inappropriate classroom behavior. An evaluation was requested to assess his cognitive, intellectual, and emotional functioning as well as school achievement to determine his need for Special Education Services.

Tests Administered

- Wechsler Intelligence Scale for Children-III (WISC-III)
- The Bender Gestalt Test
- The House-Tree-Person (H-T-P)
- TEMAS (Tell-Me-A-Story) Thematic Apperception Test (Minority Version)

Brief Family and Development History

Roberto lives with his mother, who takes care of the household, his father who works as an auto mechanic, and three sisters and one brother. Roberto is the oldest of the siblings. According to the psychosocial report, he was born full term following a normal pregnancy. He achieved his developmental milestones with some delay. He walked at the age of 3 years and began to speak by the age of 3 years. He is left handed. No history of major medical problems or hospitalizations was reported. However, the child developed asthma by the age of 10 months and continues to experience occasional asthma attacks. He exhibited some sibling rivalry and showed strong attachment to his parents. He did not attend kindergarten and entered school at the first grade level. During the first and second quarters of the school year, "he exhibited poor reading and math skills, was very quiet and failed to participate in classroom activities." However, according to his teacher, "starting with the third quarter, the child began to be more active in the classroom and to show some improvement in both reading and math, especially in the latter subject." In general, he got along well with his parents and played with his siblings. He watched television for several hours a day.

Test Results

WISC-III

On the WISC-III Roberto achieved a Verbal Score within the average range, a Performance Score within the low average range, and a Full Scale Score within the average range; thus his overall Intellectual Functioning fell within the average category. However, if his intra- and intertest scatter, bilingualism, and psychosocial environment are taken into consideration, it can be assumed that he had the potential to function within the upper end of the average category to the high average category. It is of importance to note that his Verbal Scores were higher than his Performance Scores, which is unusual for a Hispanic, bilingual student, indicating that his psychomotor functioning lags behind. (His limits were tested in order to assess his learning potential.)

BENDER MOTOR GESTALT TEST

On the Bender, Roberto achieved a score of "6" (according to the Koppitz scoring system), indicating some delay in visual motor coordination maturation and grapho-motor skills.

TEMAS

On the TEMAS test, when compared with Hispanic youngsters of his age, Roberto scored within low average to high average range in the Cognitive Functions. More specifically, he scored within the Average range in Reaction Time, indicating the ability to transform visual stimuli into meaningful stories; within high average range in Storytelling Time, for his stories were lengthy; and within high average range in Verbal Fluency, thus showing good story-telling verbal ability. Furthermore, he showed good imagination, but tended to show a somewhat poor understanding of the depicted psychological conflicts in several cards, as well as thematic perseveration in several cards.

In the Personality Functions, he scored within the low to average range overall. More specifically, he scored within the low to average range in interpersonal relations with parental figures, for he tends "to be sometimes obedient towards the maternal figure." However, he perceives his mother as insensitive when she doesn't allow him to play with his friend and punitive when he doesn't want to take a bath. He also perceives "the father as demanding, punitive and not listening to the other members of the family." The boy scored within low

to average range in interpersonal relations with siblings because he tends to engage with his siblings in mischievous behavior; and he scored within average range in interpersonal relations with peers because he relates with them in a conflict-free manner. Roberto scored within the low to average range in ability to delay gratification because he tends to gratify his immediate oral needs and, at the same time, "he wants to buy a bike, but feels sad because he doesn't have enough money." Roberto scored within low to average range in ability to cope with anxiety/depression provoking situations because he does not recover from scary situations and continues to experience high anxiety even when the stressful situation is over. He scored within low to average range in control of aggressive impulses because he tends to relate to aggressive situations; however, "he tends to be a spectator instead of the aggressor." He achieved a score within low average range in school achievement motivation because "he is afraid that he is not going to do well in the test and the teacher won't give him a prize." He scored within the low average range in self-sexual identity (body image) because "he thinks he has a wrong body and a wrong face which make him fall down... and perceives his body as being awkward just like a strange dog, which has a tail on his head and a head on his tail." Furthermore, he "tends to identify the wrong face as his mother's who pushes him in the bathtub to take a bath when he doesn't like to take a bath, thus making him bang his head against the bathtub." Roberto scored within the low average range in moral judgment because, "although he knows right from wrong, he constantly tells lies and even accuses his mother of wrong-doing." Furthermore, he scored within the low to average range in his ability to distinguish reality from fantasy. In the Affective Functions, he showed a restricted range of feelings, with an elevated score in "Sad."

Summary and Recommendations

Roberto is a 6-year-5-month-old Hispanic male youngster of average height and average weight for his age; he is attending first grade in regular classes. A complete initial evaluation was requested to determine his need for special education classes. On the WISC-III, he achieved a Verbal Score within the average range; a Performance Score within the low average range; and a Full Scale within the average range. However, there were indications showing the potential to function within the upper end of the average to the high average category.

Analysis of the projective tests revealed that Roberto presented strengths in certain cognitive functions such as reaction time (average

range), storytelling time, verbal fluency (above average range), and imagination (average range). He showed weaknesses in the recognition of psychological conflicts and in thematic perseveration from card to card. In the personality functions, he showed strength in the areas of interpersonal relations with peers; and relative strengths in the areas of interpersonal relations with parental figures and siblings, delay of gratification, control of aggressive impulses, coping with anxiety and depression, and reality testing. Roberto showed weaknesses in the areas of moral judgment and self-identity/body image. Emotional expression was restricted with an elevated score in "Sad." Emotional indicators fell within the low to adaptive level, indicating the need for individual and group psychotherapy in a clinical setting. Parental involvement is also recommended.

Based on the psychological test results, the following tentative recommendations are suggested so that an appropriate determination can be made.

- Consideration for Resource Room Services in order to remediate Roberto's academic deficits. Instruction in this setting should be provided with continuous reinforcement in order to foster more adaptive attention span and to develop appropriate classroom behavior. His storytelling ability should be utilized to foster more adequate reading, writing, and comprehension skills through the technique of Language Experience Chart Method. Moreover, he should be offered training to develop more adaptive grapho-motor skills.
- Referral for ESL classes to foster English fluency.
- Possible referral for individual and group therapy to work out his emotional problems. Parental involvement is also recommended.

In order to obtain a clearer picture of Roberto, a card-by-card sequential and content analysis was made. This analysis confirmed the TEMAS results with respect to Roberto's poor body image and self-identity (his concern with his clumsiness), possible physical abuse by his mother, and his "feelings of getting even with his mother." To illustrate those dynamics, we are enclosing three stories.

Card No. 7. An angry mother is watching her son and daughter arguing over a broken lamp. (Evaluated to pull for *Interpersonal Relations, Aggression, and Moral Judgment*).

R.T.:4" The boy and the girl are blaming the mother because she broke the lamp and the boy and the girl did not like it, because it's their lamp. (?) And they didn't want it to be broken. It was on the table and the kids were

running down the stairs real fast and the mother run too fast.

1. Brother and Sister.
2. At home.
4. Running downstairs.
5. They're going to clean it up. Anyway they lied to their mother that she broke the lamp because they did and that they were going to clean it up; and they didn't. She's going to clean it up.
- 6a. They lied that the mother broke the lamp.
- 6b. The boy feels sad (?) because she broke his lamp. The girl also feels sad. The mother feels angry because she thinks that the kids did it.

T.T.:4'50"

F: 130

Card 21-M. A youth in bed is dreaming of a monster eating and of a monster threatening. (Evaluated to pull for *Aggression, Anxiety/Depression, and Reality Testing.*)

- R.T. 4" First he's dreaming about a nightmare and then he saw a good dragon; and then he put his hand on his eyes, because he doesn't like the nightmare; but he continues to see the nightmare and he's scared of the bad nightmare.
1. He's the boy, when he could not play with his friends.
 2. In his bed.
 4. He took the money from the piggy bank and that's why he has a nightmare. (?) Because he didn't buy the bike.
 5. He's going to tell his mother that he wants to buy the bike. His mother will say, "No," because the bike is too big. (?) He wanted the sandwich and the milk but couldn't get it because of the wrong nightmare.
 - 6b. Scared (?) because he didn't like the nightmare part.

T.T.: 6'15"

F: 124

(Examiner: "Do you have any nightmares?")

(Participant: "I dream of a monster, a very scary monster; I dream of a dog which has the tail on his head and the head on his tail.")

Card 22B-M. A boy is standing on a stool and looking at the bathroom mirror, imagining his face reflected in the mirror with attributes of both sexes. (Evaluated to pull for *Anxiety/Depression, Sexual Identity, and Reality Testing.*)

R.T.: 6" The boy went to wash his hands and he sees the wrong face and the wrong body. And he couldn't wash his hands. (?) Because the wrong body and wrong head is bothering him. (?) He falls down the chair because the wrong head and the wrong body pushed him out of the chair.

1. 9 years old.
2. In the bathroom.
3. "What Am I."
4. He saw the wrong face.
5. The face pushed him in the sink (?) His mother's face.
6. He feels real sad (?) because his mother pushed him and he hurt his head.

T.T.: 3'55"

F: 94

(Examiner: "Is your mother also pushing you in the sink?")

(Participant: "Yes, because I don't like to take a bath and I don't like to go into the water, my mother pushes me into the sink (bathtub), and I bang my head.")

CLINICAL UTILITY: CASE STUDIES

Case Study 2

The second (clinical) case illustrates the utility of TEMAS, which was administered together with WISC-III, the Bender Gestalt Test, and the H-T-P test, in assessing the strengths and weaknesses of a 6-year-11-month-old White student. The child, who was undergoing psychotherapy at the time of the testing, was referred for evaluation in order to assess her intellectual potential and clarify the underlying dynamics of her emotional problems.

Name:	Cathy	School:	Catholic school
Age:	6 years 11 months	Grade:	1st
Ethnic Background:	White		

Reason for Referral

Cathy is a 6-year-11-month-old White child who is presently attending first grade in a parochial school. She was referred to the mental health center by her mother because of her poor school achievement.

Family Background

Cathy is an only child born in an intact family. Her parents were formerly divorced. Her father did not have children from his previous

marriage; however, her mother had three adult daughters who live outside the household and whom Cathy calls as aunts. According to the mother, she is spoiled by the father. The father is a businessman and the mother works in a hospital setting.

Provisional Diagnosis: Oppositional Behavior. r/o Attention Deficit Disorder.

Therapeutic Intervention

Cathy began individual play therapy with a female therapist who set therapeutic goals of having Cathy improve her school achievement and develop more adaptive interpersonal relationship with peers, especially female, because she is antagonistic towards other girls, and oppositional with both her father and mother.

After 3 months of therapy intervention, the therapist referred Cathy for psychological testing in order to assess her intellectual potential and to clarify underlying motives. The child had made very little therapeutic progress during this treatment period.

Psychological Testing

Cathy was administered the WISC-III and the TEMAS. On the WISC-III, she achieved a Verbal Scale Score within the low average range, a Performance Scale Score within the Borderline Range, and a Full Scale Score within the Borderline Range. There was significant intra- and intertest scatter, indicating that the child had the potential to function at higher intellectual level. Her serious weaknesses were in the visual-motor organization areas.

On the TEMAS, when compared with White children of her age, Cathy scored within the low to average range in the cognitive functions. More specifically, she scored within the low average range in reaction time, thus indicating cognitive impulsivity; within average range in storytelling time and within average range in verbal fluency. Furthermore, she showed adequate imagination, but inadequate understanding of the psychological conflicts. In the Personality functions, she scored within the low average range in all nine personality functions: interpersonal relations with parental figures and peers, aggressive impulse control, coping with anxiety and depression, delay of gratification, self-concept, sexual identity, moral judgment, and reality testing. Her lowest scores were in reality testing, interpersonal relationship with parental and peer figures, aggression, and body image. Her affective function was restricted with an elevated score in "Sad."

Interpretation of Results (Projective Content Analysis)

Content Analysis of the following two stories indicated a strong preoccupation with "wanting a baby brother" and homicidal feelings towards her parents, whom she perceived as unloving and unwilling to give her a baby brother...and rejecting because she was switched at birth..." These feelings are projected in the following two stories.

Card No. 7. An angry mother is watching her son and daughter arguing over a broken lamp. (Designed to pull for Interpersonal Relations, Aggression, and Moral Judgment.)

R.T.: 2" The mother is pregnant and they are fighting over the mother for the baby. Once the mother says, "Yes, I'm pregnant..." The kids get into a fight. They're saying, "No, you said it first..." "No, you said it first..." That's it.

1. The Adams Family.
2. Scary. (Where are these people?). In the House, it's spooky.
4. I don't know.
5. I don't know.
- 6a. I don't know.
- 6b. How should I know?

T.T.: 2' 50"

F: 54

Card 22G. A girl is standing on a stool and looking at the bathroom mirror, imagining her face reflected in the mirror with attributes of both sexes. (Evaluated to pull for *Anxiety/Depression*, *Sexual Identity*, and *Reality Testing*.)

R.T.: 3" Her hair is different, she is all grown up in the mirror; but she is only 8 years old; she's the same child as in the other picture (also in the yellow dress); but maybe they are sisters. That's it.

2. In her house, alone.
3. She killed them; the mother and the father was murdered by her. (?) I don't know maybe she didn't love them.
4. She didn't want to tell her mother and father her feelings. (How come?) That's it; that's all. Show me another picture.
5. Maybe she's going to be a murderer, a killer.
- 6a. She's thinking that she loves her father and mother, but she's mistaken; she didn't know, she was switched when she was a baby.
- 6b. Sad.

T.T.: 3' 55"

F: 124

Summary: Follow-up and Recommendations

Cathy was a 6-year-11-month-old White child of average height and weight for her age. She was referred for psychological testing because of poor school achievement, maladaptive interpersonal skills, and poor therapy outcome.

The results of the psychological tests with emphasis on WISC-III and TEMAS were shared with the therapist, who in turn discussed the results with Cathy's parents.

In order to remediate poor school achievement, the therapist will recommend Resource Room Services (remedial reading and writing, and math) for the student. There were indications that the student's learning potential was within the average range of intellectual functioning and that her emotional problems strongly interfered with her cognitive/intellectual functioning and thus school achievement.

The TEMAS results pointed out some cognitive strengths and clarified the child's underlying motives and needs; thus relating her school and emotional and psychosocial problems to high anxiety and not to attention deficit disorder. More specifically, the TEMAS results revealed the child's constant preoccupation and high anxiety for not "having a baby brother." and for "feeling rejected by ... and unwanted by her parents ...," Although her therapist was aware of the child's preoccupation, the therapist did not perceive that the child's preoccupation bordered on obsession and psychotic behavior. The constant preoccupation with "having a baby brother" coupled with the high degree of anxiety of feeling rejected and abandoned by her parents interfered with her attentional processes both in school and at home; thus precipitating an attentional deficit disorder, low school achievement, and maladaptive behavior. Moreover, the therapist was unaware that Cathy had such strong angry feelings toward both her parents. The TEMAS test results and interpretation revealed new underlying motives and clarified her dysfunctional behavior and poor school achievement. Consequently, the therapist modified the Individual Treatment Plan (ITP) as follows.

- Both parents were involved in filial therapy sessions, for having Cathy realize and experience that her parents loved her even if they were not going to have another child.
- Cathy's strong preoccupation with having a baby brother was addressed in individual session by utilizing the storytelling technique, whereby the main character in the stories was "a happy only child...who had the undivided parental affection ..."

- Brief pharmacotherapy (low dosage of Mellaril) in order to alleviate her high anxiety associated with her unmet needs, and thus increase her attention span and interest in school work.
- Follow-up with group psychotherapy in order to foster more adaptive psychosocial and interpersonal skills.

Cathy began to show some improvement in school and at home 2 months after the modified ITP's goals and objectives were implemented.

CASE STUDY 3

The third (clinical) case illustrates the utility of TEMAS, which was administered together with WISC-III, the Bender Gestalt Test, and the H-T-P, and other tests in assessing the strengths and weaknesses of a 14-year-7-month-old Black (Haitian) student. The student, who was referred to the Project Second Try (a special program for juvenile sexual offenders), was tested as part of the intake evaluation to assess cognitive intellectual functions and personality functions in order to help develop the Initial Treatment Plan and set up goals and objectives.

Name: Roger
Age: 14 years old
Ethnic Background: Black (Haitian)
Grade: 8—regular

Referral

Roger was referred by Family Court following allegations of sexual abuse that he had forced anal and oral sex upon his 6-year-old nephew. There is no known history of sexual victimization or perpetration outside of this single reported incident. No history of prior psychiatric disturbance or treatment is indicated in the history provided by the family.

Background

Roger was born to Haitian parents living in Brooklyn, NY. He is the youngest of six siblings from an intact marriage, with the older siblings ranging in age from 22 to 34. Psychiatric history of family members reflects only a brief period of counseling for one sibling secondary to behavior problems during school-age.

Neither parent is presently working. The father is semi-retired and is supported by social security income; the mother is receiving disability income because of a medical condition that is interfering with her usual employment as a hotel room attendant. The oldest sibling, Gauchos, lives with the family and appears to function in a parental role with Roger. Sibling conflict is described among several of

the older siblings, but Roger is not depicted as a party to any family conflict. The family presents an idealized view of Roger's functioning and behavior that makes the reported sexual misconduct appear to be an isolated and inexplicable occurrence. However, the psychological test results to be reported shortly suggest considerable underlying disturbance to be present.

Roger attends 8th grade, regular education classes, in a Brooklyn public school where he is making adequate progress. He reports mild peer difficulties in the form of being readily teased by peers. No other history of school-related difficulties is presented.

Behavioral Observations

Roger presented as a large-boned, somewhat overweight 14-year-old Black male with a lumbering appearance. He related in a pleasant manner and remained fully cooperative throughout a lengthy testing session. His affect seemed mildly dysphoric and he stated that he felt ashamed when asked about the circumstances of his referral to his treatment program, preferring not to discuss them. He was fully fluent in English despite a bilingual background in which the primary language of the home was Creole.

The sustained cooperation and interpersonal warmth was in marked contrast to the unusually and intensely aggressive content evident in the projective test protocols.

Battery of Instruments Utilized

Parent Report Measure: *Johnson Child Sexual Behavior Checklist*.

Child Measures: WISC-III; Bender-Gestalt Test; TEMAS; Kinetic Family Drawings; Piers-Harris Children's Self-Concept Scale.

Parent Report Findings

The information obtained from the parent report measure is limited because of the mother's poor English and the unavailability of a Haitian Creole interpreter. Mother responded to the Johnson Child Sexual Behavior Checklist to the best of her ability. She indicated that the family home contained no sources through which Roger might have been exposed to sexually explicit materials or the viewing of sexual behaviors. She noted that he socialized with peers of the same age. She indicated that he bathed alone and independently. She denied that he was ever sexually victimized.

Mother acknowledged the single incident of anal sodomy that led to Roger's referral to this treatment program. She does not acknowledge awareness of any other inappropriate sexual conduct or concerns.

Roger obtained scores on the WISC-III that fall within the low end of the average category. A Full Scale Score of 93 was obtained with a Verbal Score of 89 and a Performance Score of 99. The test behavior supported optimal demonstration of abilities. Adequate attention span was sustained for the duration of the testing session. Effective rapport was maintained and no anxiety was observed. Failure on specific items was generally tolerated without discomfort. A pattern of sharp cognitive drop-off was noted, wherein the last item answered correctly on a particular subtest would be of a high quality, followed by a sudden reduction in ability. This suggests that the test was accurately measuring the true limit of intellectual potential. Roger displayed considerable achievement motivation, often persisting toward task completion well beyond the standard time frames, without much frustration or diminution of interest.

The pattern of scaled scores suggested mild weakness in academically loaded subtests such as arithmetic and vocabulary, but solid performance in tasks that are purer measures of aptitude. Mild weakness was observed on tasks measuring visual motor coordination and organization and grapho-motor skills, although the index score for processing psychomotor speed still fell within the average range. However, performance on the Bender-Gestalt Test revealed an age-appropriate ability for visual-motor organization and coordination maturation and grapho motor.

Of importance in light of the nature of the referral was the relative strength (scaled score of 11) on the subtest measuring social comprehension. It was apparent that Roger was capable of understanding social cues and responding with effective judgments and behavior. The lapse in judgment leading to this sexual perpetration warranted explanation.

Emotional Functioning

TEMAS, projective stimuli, and the Piers-Harris Children's Self-Concept Scale were utilized to assess personality and emotional functioning. However, the following interpretations and analyses are based primarily on the TEMAS protocols. (The TEMAS test results are analyzed clinically because there are no norms for 14-year-old-youngsters.)

The results were very striking in light of the compliant, cooperative, and well-related nature of Roger's observed interaction style. The profile depicted an extremely poor psychosocial status containing several notable features that appeared, in conjunction with one another, to suggest pronounced disturbance and explain the propensity to act out violently. Probably most striking of these was Roger's extreme aggressive ideation and the insufficiency of his defenses to

reduce the intensity or volume of the ideation. In contrast, however, Roger apparently could utilize controls to delimit his overt aggression in the vast majority of instances. Intellectualization, denial, reaction-formation, and projection were the defenses favored to maintain his control.

A second feature evident in the profile was Roger's pronounced self-image and sexual identity disturbances. Self-Concept was bound up in a highly anxious orientation containing a strong wish for approval and relying extensively upon extrinsic reinforcement. Self-image appeared to comprise an extrinsically derived perception of negations by others and to exist largely in the absence of any peer group identity. Identity confusion was a pervasive feature with apparent preoccupation with issues related to both sexual and racial identity. He displayed an identity diffusion and appeared to have been supplied with very inadequate parental role-models as aids to stable identity formation.

A third factor related to an apparently inadequately developed moral reasoning that was evidenced in the extremity of aggressive ideation, with intense and expansive expression. Once the aggression was provoked, no one was safe from it. Bullets sprayed indiscriminately from a "rifle with a sensitive trigger." "Police killed children and children killed police ... a brother shot his sister ... a boy killed his girlfriend's father ... parents were repeatedly murdered." These responses were not without evidence of guilt and remorse, expressed in stories in which the storyteller was the inadvertent victim of his own aggression. But the undermodulation of control over aggressive ideation appeared to reflect an incomplete moral reasoning for evaluation of behavior.

The fourth factor related to the vulnerability to *ego* disintegration and the concomitant disruption in reality-testing and inadequacy of insight. This was suggested primarily by the frequent transformation of stimuli and the apparent dissociation of his self-concept from his own aggressiveness. Further, his affective identifications appeared to be quite variant from the content of his ideation.

Some additional observations based on the TEMAS results are supplied:

First, there were notable strengths. Roger displayed considerable motivation for school achievement and the capacity to delay gratification in pursuit of this achievement. The impulse-control required for this delay was, however, greatly intruded upon by the underlying aggression when it was triggered. An additional strength was the high quality of Roger's verbal expressive ability. This capacity, as

evidenced in the story-telling, exceeded the ability inferred from the verbal scaled scores on the WISC-III.

Second, the emotional dynamics could be elucidated further. There was evidence that Roger harbored extreme feelings of vulnerability and a need for protection. He seemed to experience an underlying sense of futility and a vulnerability to the intensity of his own impulses, particularly his aggression. A huge amount of rage was evoked in relationship to father figures in the TEMAS stimuli. He repeatedly evoked images of a hostile father and created scenes of violent retribution against these characters. This dynamic appeared to be bound up with an enormous amount of underlying anxiety, which similarly to the aggression, was dissociated from the self-perception. Roger appeared to be left with a more consciously expressed fear of recrimination over the outcome of his rage. Pervading the thematic material were the ideas of "lost innocence," vulnerability to loss, need for protection, and the inevitability of violence. A sense of helplessness and futility around the wish for safe sanctuary would be the best summary statement to encapsulate this dynamic.

A final note based on the results of the Piers-Harris Children's Self-Concept Scale is supplied:

The global self-concept score (T-38; 10th percentile) was comprised two normal range subscales (Behavior and Anxiety) and three subscales reflecting very significantly diminished self-concept ratings (Intellectual and School Status, Physical Appearance and Attributes, Happiness and Satisfaction). This test often produces inflated scores as the effect of youngsters' wishes to appear in a socially desirable light. As such, Roger's very low subscales were quite striking, the latter three falling at or below the 2nd percentile. Of further note, Roger's two normal range subscores were in areas already suggested to be readily dissociated from conscious awareness, particularly anxiety, which was so apparent on the projective assessment. The combination of the TEMAS and Piers-Harris results added weight to the concern over greatly impaired self-esteem.

Summary

Roger was a young adolescent referred by Family Court because of a serious sexual assault against a younger male cousin, an apparently isolated behavior within a general pattern of normative conduct. His psychological test results conveyed a sense of very serious underlying emotional disturbance in contrast to his observable behavior style of cooperation and conformity.

Intellectual assessment found generally average functioning with mild deficits in verbal processing, although the rich and fluent TEMAS

stories clearly demonstrated the strength of his expressive language capability.

Personality assessment revealed significant maladaptation in the areas of aggression, anxiety and depression, self-concept, and sexual identity. A vulnerability to loss of reality testing and *ego* disintegration was indicated, although he could utilize defenses rather effectively in support of behavioral control in the vast majority of instances. Dynamics uncovered included a strongly sensed vulnerability to a sense of lack of an effective paternal or maternal role model, an ethnic-cultural loss and a sense of alienation from the mainstream culture, and a tendency to dissociate aggression and anxiety from his self-perception.

Roger may require intensive treatment in order to address the underlying aspects of his personality disturbance and before he can begin to develop a more adaptive self-identity and adaptive psychosocial skills. He will benefit from individual and group therapy whereby he can develop a more adaptive self-identity, more adaptive defenses to deal with depression and aggressive impulses, and more adaptive psychosocial and interpersonal skills. Roger appears to have limited insight, at this point, to understand and explore the maladaptive nature of his sexual misconduct due to the intensity of his affects and the extent of his reliance upon dysfunctional defenses to maintain control over these affects. Therefore, the initial goal of treatment should be in fostering his insight and awareness.

Diagnosis: Undersocialized Conduct Disorder, (solitary) aggressive type.

The following TEMAS stories show a narrative illustration of his dynamics.

Card 4-M. A father is threatening the wife and his children. A young woman is in bed covering her face with her hands. (Evaluated to pull for *Interpersonal Relations, Aggression, Anxiety/Depression, and Moral Judgment.*)

R.T.: 10" That's the same family. The little baby grew up. There was the same father where the mother took the children out and the little son ran into the room to tell the father they were back. When the boy got in the room he saw the father in bed with another woman. And the boy ran back to the mother and told her the father was in bed with another woman. The father yelled at the son. And when the mother went into the room, she saw the lady in the bed. The mother said that she's gonna really divorce the father and she did. And she gave the family the ring back. And the children stayed with the mother and the mother

got married again. And the children threatened the father that one day he'll be sorry. And the children were right. The father got shot 3 days later after the divorce. He got shot 3 times, twice in the chest and once in the head because the woman in the bed was his best friend's wife. His best friend hired a hit man to kill him.

6A - boy - That if he was the mother, he'd hit the father.
6b - little boy - He felt sorry for his mom. He didn't know his father would do that. Cheat on his wife. He felt like punching father in the face (angry).

T.T.: 7'

F: 230

Card 20-M. A youth is in bed dreaming of a scene with a horse on a precipice, a river, and a castle. (Evaluated to pull for *Anxiety/Depression*.)

R.T.: 5" Oh!

There was this girl. She had a dream that she was flying on a gold unicorn. The unicorn lived in a castle with only a king but no queen. The unicorn took the girl to the king. The king was the girl's boyfriend and they got married. Had 12 children (it's the first time I've had to stop and think of something).

And the girl took the flying unicorn and went shopping for clothes for her children and shoes and the children grew up and had kids of their own. The end.
6a - girl on awakening - She wished that this was true.
6b - same - felt that really did happen. Happy.

T.T.: 4' 59"

F: 109

Card 22B-M. A boy is standing on a stool and looking at the bathroom mirror, imagining his face reflected in the mirror with attributes of both sexes. (Evaluated to pull for *Anxiety/Depression, Sexual Identity, and Reality Testing*.)

R.T.: 5' There was a man who went into the bathroom and he looked into the mirror and saw half of his face and half of his dead wife's face. When he saw his dead wife's face he started to sneeze and to throw up. After he went into the living room and he saw that same wife washing the dishes and cooking food. And he went crazy again and went to the bathroom and filled the tub with water and went into the tub and felt somebody massaging his

shoulders. And when he looked it was his dead wife again. And from all this craziness he died, right in the tub. And his children came into the bathroom and saw the father laying there in the tub. They called the grandmother and the aunt and told them that the father died in the tub. The end.

(How she died?) - She had a heart attack in the hospital right after she got hit by a car.

T.T.: 5' 30"

F: 161

Card 5. A youth is in bed dreaming of a scene of a picnic with a girlfriend and of a scene of a youth sleeping while an individual enters the bedroom from a window. (Evaluated to pull for *Interpersonal Relations* and *Aggression*.)

R.T.: 5" This is a young girl.

There was this little girl who had a dream that she got out of her house and went out with her boyfriend. They went to the woods and her boyfriend picked out some flowers for her. That same night, she had another dream, that her father saw her with that boy and her father starting shooting at the boy. He was lucky that the bullets from the father's gun didn't hit him. So, another night she had the same dream, but this time the father got hit with his own bullet because there was this bulletproof tree, it was chain-saw proof and dynamite proof. And then the father died because the bullet hit him in the head. They had a funeral for the father and the girl's boyfriend came to the funeral and the father came back to life and killed the boy, took him with him because he had a grenade in his hand.

6a - Girl upon awakening: She saw her father wake her up. She ran and hugged her father and kissed him and said thank God that he's alive. Then she saw her boyfriend and said Thank God, he's alive also.

6b - Girl upon awakening: That she's happy that she has a father and a boyfriend. That she doesn't want neither of them to die. That the father likes the boy and he's hoping that they get married.

T.T.: 6' 55"

F: 236

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