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HISTORY AND DEVELOPMENT OF THE MCMI® THROUGH MCMI®-IV

To fully understand and operationalize the application and range of the Millon Clinical Multiaxial Inventory, Fourth Edition (MCMI-IV; Millon, Grossman, & Millon, 2015), it is useful to gain a working knowledge of its original intent and development in context with the time and challenges in the field of psychological assessment. This chapter will focus not only on the development of this most recent iteration of the instrument but also will highlight its evolution from its original form in context with advances in personality diagnosis, assessment, and intervention throughout the latter half of the 20th century.

The MCMI-IV is a 195-item self-report inventory designed to articulate complex personality patterns in context with clinical symptomology, noteworthy concerns, and test-taking attitude in order to maximize therapeutic plans. The current, fourth generation of the instrument traces its roots back to the early 1960s, when Theodore Millon, then an associate professor at Lehigh University, a private university in the northeast United States, began contextualizing the personality study and research he had conducted throughout the early years of his career (Millon, 2002). Examining the characterologic prototypes described in the classic psychoanalytic literature, Millon noted the superbly articulated characterizations of personality styles, but he lamented the lack of comprehensiveness and consistency across these different patterns. A self-described "inclusive behaviorist" in his early career (Millon, 1990), Millon began blending his empirical background with his interest in integrative theory to attempt to construct an explanatory framework for basic personality constellations. He felt that this could, at once, describe core motivations of individuals and also provide a system for classification of personality variables. The driving force of this exercise was to make the case for personality as the central concern for clinical psychology, owing to its influence on, and ability to modulate, clinical symptomology. The fruits of this labor, manifest in Millon's (1969) *Modern*

Psychopathology, set the stage not only for the first Millon Clinical Multiaxial Inventory (MCMI; Millon, 1977) but also for the designation of personality on its own separate axis in the multiaxial systems of DSM-III through DSM-IV.

Millon's (1969) original template, described as a "biosocial-learning theory," mapped a continuum from adaptive to maladaptive personality patterns and specified several distinct motivating forces when, combined with one another, gave rise to a series of personality prototypes evident among adaptive and maladaptive individuals. These motivational orientations emphasized social engagement and adaptation to the environment, drawn as opposing ends of a continuum. Social engagement was seen as engaged versus disengaged, whereas the adaptation continuum was described as active versus passive (that is, whether to act on an environment in order to suit the individual or to accept what the environment provides and change aspects of the self to fit in). This schema, when examined for different possible combinations, manifested eight prototypal personalities which largely coincided with identified problematic personality trends as seen in the literature and in the official psychiatric diagnostic system (see Table 1.1). Millon's framework garnered the attention of key figures from the DSM leadership in the 1970s, and he was recruited to its personality disorders work group in which many of his conceptualizations were ultimately translated to its empirically based diagnostic criteria of the DSM-III (American Psychiatric Association [APA], 1980).

Because Millon had specified a *measurable* framework for understanding personalities, he and his colleagues began exploring methods for doing this. Several attempts were made to map data points of existing instruments, such as the original MMPI (Hathaway & McKinley, 1940) and the Rorschach (Rorschach, 1921), to Millon's personality constructs, but these efforts yielded inconsistent or incomplete results. Ultimately, Millon decided to formulate a new research-oriented instrument—the Millon-Illinois Self-Report Inventory

Table 1.1 Millon's Original Eight Personality Prototypes

Relational Mode	Adaptive Mode
Detached	Passive: Schizoid
	Active: Avoidant
Dependent	Passive: Dependent
	Active: Histrionic
Independent	Passive: Narcissistic
	Active: Antisocial
Ambivalent	Passive: Compulsive
	Active: Negativistic

(MISRI)—which would be constructed with the explicit intent of measuring these personality prototypes. As his explorations expanded from academic and research settings to clinical use, measures for the major psychiatric disorders were added as a means to contextualize personality with major psychiatric disturbance. These additions were integrated into the original Millon Clinical Multiaxial Inventory (Millon, 1977).

CONSTRUCTION OF THE LEGACY MCMI TESTS (MCMI, MCMI-II, MCMI-III)

Envisioned as a theoretically derived, empirically supported instrument, Millon chose to construct the original MCMI (as well as its predecessor, the MISRI) employing Loevinger's (1957) classic three-stage model for objective test construction. In the first, Theoretical-Substantive stage, Millon and his colleagues developed more than 1,000 items written as either operational definitions of the theoretical constructs comprising the personality patterns or self-statements reflective of psychiatric symptomology. This initial stage was then followed by the Internal-Structural stage, in which this large item pool was administered to a developmental sample drawn from psychological and psychiatric clinics, inpatient and outpatient, across the United States. Classic psychometric measures were then applied to this sample to determine the adequacy of the items in terms of reliability (e.g., Cronbach's alpha, repeated measures). Those items retained through the second phase were subsequently assessed in a third phase, the External-Criterion validation stage, wherein the surviving items were assessed for agreement with clinicians' ratings of subjects and how they corresponded with scales on the new assessment, as well as concordance with other instruments measuring similar constructs.

DON'T FORGET

Theodore Millon designed his assessment instruments to be theoretically derived and empirically validated measures.

The original MCMI featured eight primary personality scales corresponding to Millon's eight personality styles, as well as three "severe" personality scales (Schizotypal, Cycloid [Borderline], and Paranoid) measuring personality prototypes conceived as more structurally compromised variants of the Basic Personality Patterns. Additionally, nine Clinical Syndrome scales measured classic psychopathology (e.g., depression, anxiety, alcohol abuse), and one validity scale was developed to detect random response patterns. In addition, the new instrument used Base Rate (BR) scores as an alternative to the commonly

used T-score. The BR system, Millon argued, offered greater idiographic accuracy by rejecting the assumption that the prevalence rate for any given disorder is the same as the prevalence rate for any other disorder. The BR system, instead, referred to the prevalence rate (or base rate) of the disorder, setting a cutting point at a specified percentile of examinees for any of the disorders under consideration and using an iterative process to determine key scores and all score conversions (Wetzler, 1990).

The MCMI rapidly became one of the most popular instruments used by clinical psychologists (Piotrowski & Keller, 1989; Piotrowski & Lubin, 1989, 1990). This was, in large part, because of its overlap with the personality disorders of the diagnostic system, offering clinicians a system in which they could further contextualize official diagnostic criteria via the explanatory principles embedded in Millon's theory (Choca & Grossman, 2015). By the time of the original MCMI's release in 1977, revisions to be introduced in DSM-III were imminent. There was much discussion about the possibility of adding the sadistic and the masochistic personality disorders to the DSM. Millon, who championed these additions, also added these two patterns to his theory and to the plans for the MCMI's first major revision. The political landscape of the era was not in favor of these additions, because women and LGBT groups, in particular, opposed these inclusions because of concern regarding social and legal ramifications (Millon, 1981). Although the American Psychiatric Association ultimately voted against the additions and the prototypes were relegated to the DSM-III appendix for further consideration, Millon felt strongly about the importance and validity of these patterns for clinical applications, and they were incorporated into the MCMI-II (Millon, 1987).

The MCMI-II also introduced a system of differential weights for items, reflective of their use as prototypal or supportive items for given scales. An item written specifically for a given scale was weighted; that is, it was given more than 1 raw score point (either 2 or 3) when endorsed for that scale. The same item, then, may have been used on another scale to measure a similar or contextually modified concept for that scale, but it was limited to a raw weight of 1. This system provided an economical means to explain similarities between different prototypes using minimal test content, but much like the sadistic and masochistic prototypes, it was not without its own controversy. Although these differential raw score weights made sense from a theoretical point of view, it added significantly to the complexity of scoring and gave rise to difficulties with discriminant validity (Retzlaff, 1991; Retzlaff, Sheehan, & Lorr, 1990; Streiner, Goldberg, & Miller, 1993; Streiner, & Miller, 1989; Widiger, Williams, Spitzer, & Frances, 1985).

Less controversial, and arguably more beneficial, the MCMI-II also introduced three Modifying Indices, similar in scope to the MMPI validity scales. These

three scales, Disclosure, Desirability, and Debasement, based on extant content, measured the examinee's test-taking approach and added a dimension that further contextualized the person's response to the challenges of self-reflection inherent in personality assessment.

The end of the 1980s saw the most major theoretical revision in Millon's career, culminating in a publication that tied core personality motivations to evolutionary theory (Millon, 1990). The new MCMI-II prototypes had already added a discordant element to the theory that, similar to the other relational factors, featured a passive variant (the self-defeating, masochistic personality) as well as an active variant (the forceful-aggressive, sadistic personality). This new dimension, along with the classic biosocial-learning schema of the eight basic prototypes, showed considerable overlap with Millon's evolutionary proposals, and the existing personality patterns were reconceptualized as expressions of nature analogous to evolutionary phenomena of the natural world (e.g., Wilson, 1978). Subsequent publications based on the evolutionary theory included the second edition of Millon's primary theory text, *Disorders of Personality* (Millon & Davis, 1996), as well as the next version of the instrument, the MCMI-III (Millon, 1994; Millon, Millon, & Davis, 1997). Chapter 2 details Millon's evolutionary theory and its clinical application.

DON'T FORGET

Millon's theory was originally designed as a biosocial-learning theory. In 1990, he reconceptualized it as a more inclusive evolutionary theory. Most of the original theory was incorporated into this new version, which provides the guiding framework for all modern Millon inventories, including the MCMI-IV.

Among other more nuanced changes incorporated into the revised theory and the MCMI-III (e.g., the impulsivity of the cycloid pattern being more fully fleshed out for its emotionality into the Borderline prototype), a new pattern, the depressive personality, was introduced and discussed as a possible addition to the upcoming DSM-IV (APA, 1994). Although the pattern was ultimately relegated to the appendix for future consideration, it has enjoyed recognition as an entity that is qualitatively distinct from both major depression and persistent depression/dysthymic disorder (e.g., Maddux & Johansson, 2014). Finally, in an effort to improve discriminant validity and parsimony, the weighting system for the MCMI-III was simplified. All items included on the MCMI-III, whether legacy or newly introduced, were designated as prototypal on only one scale and given a weight of 2 raw score points. They were then considered, based on theoretical consideration and intercorrelations, for inclusion as supplementary items for other scales (Jankowski, 2002; Millon, Millon, Davis, & Grossman, 2009).

The mid-2000s also saw the first set of official facet scales published as part of the MCMI-III (Craig, 2005), an expansion of factorial ideas previously considered for the Millon inventories (e.g., Davis, 1993). Designed to reflect aspects of the evolutionary theory geared toward specific structural and functional domains, the Grossman Facet Scales provided a further breakdown of each of the primary personality scales along theoretical demarcations (Grossman, 2004; Millon, Millon, Davis, & Grossman, 2006a, 2006b). A final revision to the MCMI-III (Millon et al., 2009) updated the norms to the contemporary, mixed-gender standard, and introduced the Inconsistency scale to partner with and improve on the instrument's validity measures.

Millon's final theoretical revision (2011) set the stage for the development of the current instrument, the MCMI-IV. Although the revision contained numerous enhancements and clarifications, two additions are most salient. First, this edition of the theory introduced another personality pattern, the Turbulent prototype, based on early psychoanalytic descriptions (e.g., Kraepelin, 1921; see also Boudry, 1983, and Carlson & Maniacci, 2012, for further discussion) as well as more current references in popular culture (e.g., Jamison, 2005). Second, the theory more fully articulated a wider bandwidth from adaptive to maladaptive levels of personality functioning. Although the evolutionary theory always specified a continuum, the revision sought to highlight characteristics at mild, moderate, and severe personologic pathology levels, designated as Style, Type, and Disorder, respectively.

Rapid Reference 1.1

Millon Clinical Multiaxial Inventory-IV (MCMI-IV)

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What the test measures: Personality patterns and domains (adaptive styles, abnormal traits, clinical disorders) in context with clinical psychopathology with individuals seeking clinical services

Age range: 18 years and older

Reading level: Fifth grade

Average administration time: 30 to 40 minutes or less

Norms: The instrument is normed on 1,547 clinical subjects (individuals seeking mental health services). Detailed normative information is available in the MCMI-IV examiner's manual (Millon et al., 2015).

Qualification of examiners: Purchase of MCMI-IV materials requires a C-level qualification as elaborated at www.pearsonclinical.com/psychology/qualifications.html.

Products and services: Examiner's manual (digital and paper), paper-pencil test materials (for mail-in scoring), and administration and scoring services via digital platforms Q-Global (web-based) and Q-Local (local PC-based) are available through Pearson Clinical Assessments.

DEVELOPMENT OF THE MCMI-IV

The decision to develop a new version of the MCMI followed the historic precedent to keep the instrument aligned not only with the official diagnostic system, but with contemporary clinical needs as reflected by sociological changes. The manual for the last update to the MCMI-III (Millon et al., 2009) noted several of these trends, such as different concentrations of disorders and diagnoses, as well as a new standard for a combined-gender normative sample in several other instruments (prompting a renorming of the MCMI-III in its 4th edition). However, the authors agreed that there were substantive societal changes that could not be addressed by the MCMI-III renorming project alone, and Millon's theory had been recently significantly updated (Millon, 2011). Therefore, the decision was made for the development of the next generation of the instrument, the MCMI-IV.

Theoretical-Substantive Stage

With the most recent iteration of the theory completed and published, Millon began composing new items for use in the MCMI-IV. Consistent with methods used in the legacy MCMI instruments, a major focus was on construction of new items relevant to the new constructs in the theory and the instrument, as well as a review and revision of MCMI-III item pools reflective of the new instrument's structures and scales. This new item content was derived from the theory as well as from the newly published DSM-V criteria (APA, 2013). This stage of development also saw a focus on contemporary social problems as well as concern for increased clinical focus on cognitive areas not generally associated with MCMI assessment, leading to several new noteworthy response categories and content (e.g., violence

potential, ADHD). Across MCMI-III constructs maintained for the MCMI-IV, new item development focused on improving the psychometric properties of the scales as well as adding to the comprehensiveness of the constructs.

Rapid Reference 1.2

Stages for Development: MCMI-IV

1. Theoretical-Substantive
2. Internal-Structural
3. External-Criterion

Members of the development team joined in this stage to scrutinize the newly formed item content, adding items in some cases and clarifying language across the new items. Their efforts led to the pilot study using a research form containing 245 new items administered to 449 individuals. Unlike prior iterations, this study included clinical and nonclinical subjects in an effort to examine the possibility of extending the traditionally clinically oriented measure to broader usage. Although this effort ultimately did not result in an instrument that could be this broadly administered, these data aided in shaping the larger clinical bandwidth reflective of the theory's expansion to include different levels of pathology. This stage also helped ensure clarity of items as well as highlight early statistical trends.

From the new item content, 106 items were retained to move on to the more formal item-tryout stage. The new items were added to the existing 175 items comprising the MCMI-III, resulting in a 281-item research form administered to a more targeted clinical group of 235 examinees. This group also completed two collateral measures: the Minnesota Multiphasic Personality Inventory-2 Restructured Form (MMPI-2-RF; Ben-Porath & Tellegen, 2008) and the Brief Symptom Inventory (BSI; Derogatis, 1993). Additionally, administering clinicians were asked to complete a clinician's rating form to specify their clinical assessment for each examinee. At this point, approximately 50 redundant or problematic items were replaced and several new items were added, primarily to aid comprehensiveness to several noteworthy response lists. The 109 new items retained after this stage were then translated into Spanish, as well as back-translated, to evaluate their usefulness and appropriateness for United States Spanish-speaking populations. Both an English and a Spanish final research form were assembled, composed of the MCMI-III in its entirety, as well as the 109 remaining new items, for administration in the standardization (internal-structural) stage.

Internal-Structural Stage

Participation in the standardization efforts for the MCMI-IV was solicited by the publisher, targeting experienced MCMI-III users. For standardization, these clinicians administered the research form, including the 175 MCMI-III items, as well as the new items constructed specifically for MCMI-IV. This method, administered through the publisher's online testing platform, was incorporated to provide the clinician and examinee with a valid MCMI-III profile for clinical use while subjecting new item content for standardization purposes. Examinees were administered the MCMI-III content first and were subsequently notified that the remaining items would not be used in their current clinical evaluation. During this process, clinicians were also asked to complete a clinician's rating form, which described all MCMI-IV constructs, and instructed the clinician to rate the examinee on these constructs based on their clinical judgment.

Standardization took place in fall 2014, with data analysis following this stage in spring 2015 to determine final item selection from MCMI-III and new item content as well as final scale composition. Primary selection factors included an item's correlation with the targeted scale, representativeness of the clinical construct under consideration, and endorsement frequency. Items retained in this first round of analysis were then assigned as prototypal items for the target MCMI-IV scale and designated as carrying a weight of 2 raw score points for that scale.

Items surviving this stage as prototypal were then subjected to covariance structure analysis (CSA; also referred to as *confirmatory factor analysis*). This statistical method was chosen for its ability to incorporate theoretical considerations in guiding scale composition without allowing the theory to predetermine this (Hoyle, 1991). The method led to a minor number of items being discarded from the prototypal pool. Items were then assessed for use as non-prototypal, or supportive, content on other primary personality or syndrome scales, where they would be designated with a raw score of 1 point. It is important to note, in this system of scale construction, that any given item may be used on several scales as a non-prototypal item, but they may only be used as a prototypal item on the single scale for which it was deliberately written. Criteria for inclusion as a supportive item on another scale included its relevance and additive value from theoretical and diagnostic perspectives, as well as its correlation with the target scale. Final Cronbach's alpha measures were applied to each scale, which finalized the 195-item content of the MCMI-IV. Tables 1.2 and 1.3 present Cronbach's alpha scores for the Personality and Clinical Syndrome scales, respectively.

The Grossman Facet Scales, first introduced in the MCMI-III, were then constructed, primarily focusing on individual primary personality scale content. The

Table 1.2 Reliability of MCMI-IV Personality Scales

		Cronbach's Alpha
Clinical Personality Patterns		
1	**Schizoid (AASchd)**	**.82**
	1.1 Interpersonally Unengaged	.73
	1.2 Meager Content	.82
	1.3 Temperamentally Apathetic	.80
2A	**Avoidant (SRAvoid)**	**.89**
	2A.1 Interpersonally Aversive	.80
	2A.2 Alienated Self-Image	.83
	2A.3 Vexatious Content	.83
2B	**Melancholic (DFMelan)**	**.92**
	2B.1 Cognitively Fatalistic	.82
	2B.2 Worthless Self-Image	.86
	2B.3 Temperamentally Woeful	.87
3	**Dependent (DADepn)**	**.81**
	3.1 Expressively Puerile	.81
	3.2 Interpersonally Submissive	.68
	3.3 Inept Self-Image	.77
4A	**Histrionic (SPHistr)**	**.83**
	4A.1 Expressively Dramatic	.70
	4A.2 Interpersonally Attention-Seeking	.80
	4A.3 Temperamentally Fickle	.83
4B	**Turbulent (EETurbu)**	**.87**
	4B.1 Expressively Impetuous	.81
	4B.2 Interpersonally High-Spirited	.75
	4B.3 Exalted Self-Image	.77
5	**Narcissistic (CENarc)**	**.75**
	5.1 Interpersonally Exploitive	.74
	5.2 Cognitively Expansive	.80
	5.3 Admirable Self-Image	.63
6A	**Antisocial (ADAntis)**	**.78**
	6A.1 Interpersonally Irresponsible	.68
	6A.2 Autonomous Self-Image	.65
	6A.3 Acting-Out Dynamics	.77
6B	**Sadistic (ADSadis)**	**.80**
	6B.1 Expressively Precipitate	.82
	6B.2 Interpersonally Abrasive	.67
	6B.3 Eruptive Architecture	.81
7	**Compulsive (RCComp)**	**.67**
	7.1 Expressively Disciplined	.67
	7.2 Cognitively Constricted	.78
	7.3 Reliable Self-Image	.69

Table 1.2 (*Continued*)

			Cronbach's Alpha
8A	**Negativistic (DRNegat)**		**.86**
	8A.1	Expressively Embittered	.77
	8A.2	Discontented Self-Image	.83
	8A.3	Temperamentally Irritable	.85
8B	**Masochistic (AAMasoc)**		**.90**
	8B.1	Undeserving Self-Image	.87
	8B.2	Inverted Architecture	.81
	8B.3	Temperamentally Dysphoric	.79
Severe Personality Pathology			
S	**Schizotypal (ESSchizoph)**		**.89**
	S.1	Cognitively Circumstantial	.82
	S.2	Estranged Self-Image	.85
	S.3	Chaotic Content	.80
C	**Borderline (UBCycloph)**		**.91**
	C.1	Uncertain Self-Image	.88
	C.2	Split Architecture	.85
	C.3	Temperamentally Labile	.83
P	**Paranoid (MPParaph)**		**.84**
	P.1	Expressively Defensive	.76
	P.2	Cognitively Mistrustful	.71
	P.3	Projection Dynamics	.80

Table 1.3 Reliability of MCMI-IV Syndrome Scales

		Cronbach's Alpha
Clinical Syndromes		
A	Generalized Anxiety (GENanx)	.82
H	Somatic Symptom (SOMsym)	.84
N	Bipolar Spectrum (BIPspe)	.71
D	Persistent Depression (PERdep)	.93
B	Alcohol Use (ALCuse)	.65
T	Drug Use (DRGuse)	.83
R	Post-Traumatic Stress (P-Tstr)	.86
Severe Clinical Syndromes		
SS	Schizophrenic Spectrum (SCHspe)	.86
CC	Major Depression (MAJdep)	.92
PP	Delusional Disorder (DELdis)	.81

purpose of the facet scales is to offer more nuanced information regarding a given personality pattern, highlighting a person's various traits such as cognition, self-image, temperament, and so on. Similar to the MCMI-III facets, the structure of the Grossman Facet Scales was conceived as an attempt to capture the most salient prototypal trait features as identified by the eight functional and structural domains of the theory (see Chapter 2 for a complete review of these domains). Of the eight domains, the theory posited that approximately three would be most salient for any given prototypal personality pattern, and the facet scales would identify the three most prominent traits present in each of the personality scales of the MCMI-IV. Three facets were identified for each of the 15 Clinical Personality Pattern scales and the Severe Personality Pathology scales, yielding a total of 45 facets, largely overlapping with the theory's prediction of which facets are prominent for a given prototype.

Construction of the MCMI-IV facet scales began with rational predictions about which items from a personality scale's item pool would match with a trait domain specified as most salient by the theory, although some item content better coalesced with domains not predicted by the theory to be most prominent. This was followed by a CVA process, similar to that used to help form the primary scales, to improve the overall model fit. The final stage of facet development included examining related item content from other scales, using theoretical and correlational rationale to augment the facets, and calculating Cronbach's alphas for each resultant scale.

The sum total of all cases submitted for inclusion in the normative sample, through all phases of development, was 1,884. Following exclusion criteria (e.g., out-of-range validity measures, too many missing items), 1,547 cases were included for the final development and standardization sample for the MCMI-IV. This stratified sample sought to match with characteristics of United States and Canadian adults seeking therapeutic treatment with regard to age, race or ethnicity, setting, gender, geographic region, and education. The population in this sample, as is typical of help-seeking individuals in the United States and Canada, tends to favor white, college-educated adults in their mid-20s to -40s, and with good heterogeneity for marital status and geographic region. Inclusion of different races and ethnicities fell short of desired numbers owing to continued underrepresentation of minorities across clinical settings, but exceeded prior efforts for earlier MCMI normative samples.

BR score conversions were calculated next. As stated previously, the BR system is an alternative to the popular T-score, because it does not assume a normal distribution in which an accurate reflection of the person can be gleaned from measuring a standard distance from a mean score. Instead, BR scores are anchored

to specified prevalence rates of a characteristic or diagnosis. As with previous versions of the MCMI and other Millon inventories, the targeted anchor point is set at BR 75, with a further reference point at BR 85 (with an additional reference for personality scales at BR 60), with those points being interpretable similarly across scales. BR scores also are defined as representative of a continuum from adaptive to maladaptive characteristics and symptomology. For the personality scales, these anchor points may be generally interpreted as follows:

BR 60–74 range: Personality *style* (generally adaptive with some prominent traits that may occasionally create concern)

BR 75–84 range: Problematic personality *type* (noticeable constellation of personality attributes that may be more predictably problematic)

BR 85+ range: Clinical personality *disorder,* with high likelihood of pervasive personality challenges at a more pronounced and impairing level

For the Clinical Syndrome and Modifying Indices scales, the BR 75 and 85 anchor points may be generally interpreted as presence or prominence of the given construct, respectively.

BR scores were derived from the clinician ratings of 938 examinees in the normative sample. These forms included DSM diagnostic information as well as severity ratings for all MCMI-IV primary scale constructs. For personality patterns, the percentage of the sample for which each pattern was diagnosed with a DSM diagnosis (when applicable), or a moderate to severe dysfunction was identified, was used as an anchor for an estimate of the base rate with which that pattern constitutes a problematic personality type in the population and was linked to a BR of 75. The percentage of those, then, who received a DSM diagnosis or severe dysfunction was used as the anchor point for the more pronounced BR rate of 85. Similar distinctions were used to establish the BR 75 and 85 anchor points for the Clinical Syndrome scales. The median raw score for a given scale's distribution was assigned a BR of 60, whereas raw scores of 0 equated with BR 0, and BR 115 related to the maximum raw score for a scale. Linear interpolation was then used to complete the score table for each table.

Different criteria were used to create the BR score transformations for the Modifying Indices and facet scales. For scales X (Disclosure), Y (Desirability), and Z (Debasement), the range was decreased to 0–100, and BRs were calculated to equate with designated extremes. For Scale X, a BR of 35 and 85 was set as the point at which the lowest 15% and highest 10% scored, respectively. The additional point of BR 75 was set at the next highest 15%. Scales Y and Z used BR 85 as anchored to the highest 5%, with BR 75 equating to the next 15%. These scales, too, used BR 35 as designating the lowest 15% or raw scores, with linear

interpolation to complete the score set. The facet scales, likewise, feature a range from 0 to 100, similar to the Modifying Indices, and were tied to percentiles in the raw score distribution.

External-Criterion Stage

The final stage of development for the MCMI-IV involved comparisons of examinee results with measures collected by both administering clinicians as well as via instruments measuring similar constructs. As mentioned, the MMPI-2-RF and BSI were administered to a portion of the developmental sample, and clinical rating forms were collected for 938 examinees in the standardization phase. Overall results of the comparative studies found meaningful relationships between the instruments. A majority of Clinical Syndrome constructs on both instruments were found to parallel considerably with MCMI-IV Clinical Syndrome scales, whereas there were generally low to moderate correlations between MMPI-2-RF scales and related MCMI-IV personality scales. This observation lends credence to the common perspective that the two instruments are best used complementarily, because they emphasize different areas of related clinical inquiry (Millon et al., 2015). Measures relevant to the clinician's rating form focus on positive predictive power as measured through sensitivity and specificity for diagnoses and identified concerns. The MCMI-IV demonstrated adequate predictive power in these studies, with 15 of 25 measures, evidencing sensitivity ratings of above 0.5 and specificity values higher than sensitivity overall. Tables 1.4 and 1.5 present values for sensitivity and specificity for the Personality and Clinical Syndrome scales, respectively. See Millon et al. (2015) for a thorough review of validity data inclusive of these values and positive predictor values.

By the end of the 20th century, Millon had become more focused on the application of assessment to intervention (Millon, 1999, 2002; Millon & Grossman, 2007a, 2007b, 2007c). Consistent with his 2011 text shift emphasizing the larger bandwidth of personality severity and adaptiveness across all 15 personality prototypes, the MCMI-IV vision was to focus on useful clinical information beyond the label or diagnosis and its applicability to intervention. In addition to the innovation of specifying a continuum of three ranges of personality functioning, a decision was made to create a new profile page as an alternative to the standard profile page, which would use Millon's most recent abbreviations representative of the personality spectra in lieu of the classic labels (e.g., EETurbu in place of Turbulent). This is aligned with APA trends and directives toward greater openness in assessment as well as with some modalities' encouragement of more direct

Table 1.4 Sensitivity and Specificity of MCMI-IV Personality Scales

Personality Scale		Sensitivity	Specificity
Clinical Personality Patterns			
1	Schizoid (AASchd)	.50	.84
2A	Avoidant (SRAvoid)	.68	.65
2B	Melancholic (DFMelan)	.70	.72
3	Dependent (DADepn)	.56	.75
4A	Histrionic (SPHistr)	.33	.81
4B	Turbulent (EETurbu)	.63	.87
5	Narcissistic (CENarc)	.50	.83
6A	Antisocial (ADAntis)	.49	.87
6B	Sadistic (ADSadis)	.43	.89
7	Compulsive (RCComp)	.30	.84
8A	Negativistic (DRNegat)	.58	.71
8B	Masochistic (AAMasoc)	.22	.85
Severe Personality Pathology			
S	Schizotypal (ESSchizoph)	.31	.91
C	Borderline (UBCycloph)	.46	.82
P	Paranoid (MPParaph)	.40	.80

Table 1.5 Sensitivity and Specificity of MCMI-IV Clinical Syndrome Scales

Clinical Syndrome Scale		Sensitivity	Specificity
Clinical Syndromes			
A	Generalized Anxiety (GENanx)	.72	.48
H	Somatic Symptom (SOMsym)	.51	.75
N	Bipolar Spectrum (BIPspe)	.58	.79
D	Persistent Depression (PERdep)	.44	.82
B	Alcohol Use (ALCuse)	.68	.83
T	Drug Use (DRGuse)	.72	.90
R	Post-Traumatic Stress (P-Tstr)	.62	.83
Severe Clinical Syndromes			
SS	Schizophrenic Spectrum (SCHspe)	.33	.95
CC	Major Depression (MAJdep)	.83	.67
PP	Delusional Disorder (DELdis)	.50	.94

and collaborative feedback in psychological testing while avoiding misguidance of diagnostic labeling (e.g., Therapeutic Assessment). Also consistent with therapeutic utility, the MCMI-IV features an enhanced treatment guide tied more directly to the motivating aims of the evolutionary theory as well as explications of personality dimensions in a revised set of facet scales.

TEST YOURSELF

1. **Millon's theory was originally conceptualized explicitly using principles of evolution.**
   a. True
   b. False
2. **The original MCMI (1977) contained how many personality scales?**
   a. 14
   b. 8
   c. 11
   d. 15
3. **Originally introduced for the MCMI-III, the Grossman Facet Scales were designed to do which of the following?**
   a. To identify motivating aims corresponding to the evolutionary polarities of Millon's theory
   b. To provide a further breakdown of each of the primary personality scales along theoretical demarcations
   c. To be derived factorially and represent a complementary theory of personality
   d. To denote expected clinical symptomology arising from personality patterns
4. **The personality prototype introduced in Millon's 2011 update to the theory, and included for the first time in the MCMI-IV, is which of the following patterns?**
   a. Turbulent
   b. Self-Denigrating
   c. Forceful
   d. Melancholic
5. **How many levels of functioning are identified on the MCMI-IV personality scales, and what are they called?**
   a. 2; flexible, inflexible
   b. 3; normal, abnormal, pathological
   c. 3; style, type, disorder
   d. 2; adaptive, maladaptive
6. **The MCMI-IV is designed to be used with both clinical and nonclinical populations.**
   a. True
   b. False

7. Which of the following is used as the primary interpretive metric on the MCMI-IV, and why?

a. The BR score; it is calculated by anchoring to several key percentile ranks and is therefore capable of estimating an individual's standing in comparison with others in the normative population.
b. The T-score; it is the most common and popular and the best understood of the various metrics used in modern assessment.
c. The T-score; it adequately captures ranges of pathology and allows for distinctions along a standard deviation.
d. The BR score; it does not assume a normal distribution of pathology and instead is anchored to estimates of prevalence of a given disorder.

Answers: 1. b; 2. c; 3. b; 4. a; 5. c; 6. b; 7. d