Papeles del Psicólogo, 2005. Vol. 26, pp. 129-137

ASSESSMENT OF SELF-REPORT RESPONSE DISTORSION BY MEANS OF THE MMPI-2

Héctor González Ordi and Iciar Iruarrizaga Díez
Madrid Complutense University

The Minnesota Multiphasic Personality Inventory 2, MMPI-2 is one of the best validated multi-scale measures for random responding, malingered psychopathology and defensiveness. The present paper presents in detail different possibilities, strategies and scales provided by the MMPI-2 for the detection of overreporting response style (F, Fb and F(p) scales, positive F-K index, and FBS and DsR scales), underreporting response style (L and K scales, negative F-K index, and S and Wsd scales), and random response style (cannot-say or "?", F, Fb, VRIN and TRIN scales).

El Inventario Multifásico de Personalidad de Minnesota 2, MMPI-2, es uno de los instrumentos multiescalares de amplio espectro mejor validados para explorar estilos de respuesta aleatorios, simulación de psicopatología y defensividad. En el presente artículo se exponen en detalle las distintas posibilidades, estrategias y escalas que proporciona el empleo del MMPI-2 para la evaluación de estilos de respuesta sobredimensionados (escalas F, Fb, F(p), índice F-K positivo, FBS y DsR), estilos de respuesta infradimensionados (escalas L, K, índice F-K negativo, S y Wsd) y estilos de respuesta aleatorios (escalas ?, F, Fb, VRIN y TRIN).

Lying, deception, and the concealment, distortion and twisting of information are behaviours essential to the human being (Martínez Selva, 2005), who pursues a variety of aims in the process of social interaction, such as causing a positive impression in others, benefiting oneself or others, avoiding a potential punishment or simply maintaining good social interaction by trying to avoid unnecessarily hurting others' feelings (Vrij, 2001).

Let us imagine for a moment that we had been invaded by aliens who had the power of omnipresence and were all-seeing and all-hearing, always told the truth about everything, and spent their time simply observing us and constantly interfering in our human conversations. We would undoubtedly be plunged into absolute chaos, powerless to deal with this type of "truth game" (indeed, this provides the basis for the plot of Fredric Brown's excellent science-fiction novel *Martians Go Home*).

The use of diverse strategies for distorting information in pursuit of a particular aim is a constituent part of the social interaction process, known, accepted and consented to by all parties, as long as those strategies are within the limits of what is socially admissible (Kashy & DePaulo, 1996).

The field of psychological assessment through self-report is by no means immune to the distortion of information by respondents for various reasons, which is commonly referred to as response distortion (Miguel-Tobal, 1993; Baer, Rinaldo & Berry, 2003). The study of response distortion and the most effective strategies or instruments for detecting it is strongly on the increase, and as it develops it is having more and more important consequences for clinical, forensic and medico-legal practice.

Among the different types of response distortion found are the following (Baer, Rinaldo & Berry, 2003):

1. "Bad image" patterns, overreporting response styles or malingering (*faking bad*), when the respondent deliberately tries to create the impression of having some disorder or deterioration through the exaggeration or fabrication of symptoms and problems and by emphasizing as far as possible his or her negative characteristics.
2. "Good image" patterns, underreporting response styles, defensiveness or social desirability (*faking good*), when respondents deliberately attempt to create a favourable impression of themselves, omitting to mention, denying or concealing symptoms

Correspondence: Dr. Héctor González Ordi. *Departamento de Psicología Básica II (Procesos Cognitivos). Facultad de Psicología. Universidad Complutense de Madrid. Campus de Somosaguas s/n. 28223 Madrid. Spain. E-mail: hectorgo@psi.ucm.es*

and problems, and highlighting their positive characteristics.

3. Random response style, when the subject responds independently of the item content, due to difficulties in reading or understanding items, reluctance to cooperate, carelessness, lack of concentration or confused states of mind. Within this category are the "acquiescence" and "non-acquiescence" approaches, which involve the tendency to responder indiscriminately "true" or "false" to all the items, regardless of their content.

THE MINNESOTA MULTIPHASIC PERSONALITY INVENTORY: MMPI, MMPI-2 AND MMPI-A

The Minnesota Multiphasic Personality Inventory (MMPI), originally developed by Hathaway and McKinley (1940), and its subsequent revised and restandardized versions for adults, the **MMPI-2** (Butcher, Dahlstrom, Graham, Tellegen & Kaemmer, 1989) and for adolescents, the **MMPI-A** (Butcher, Williams, Graham, Archer, Tellegen, Ben-Porath & Kaemmer, 1992), published in the late 1980s, is one of the most widely used questionnaires for assessing psychopathological disorders in the clinical field in general (Lubin, Larsen & Matarazzo, 1984; Piotrowski, 1998) and in the forensic context in particular (Bartol & Bartol, 2004; Boccaccini & Brodsky, 1999).

As we shall see, the MMPI-2 includes various indicators of its validity that have demonstrated their utility in the detection of faking (Elhai, Naifeh, Zucker, Gold, Deitsch & Frueh, 2004; Guriel & Fremouw, 2003; Rogers, Sewell, Martin & Vitacco, 2003). Indeed, according to Rogers (1997), the MMPI and MMPI-2 are the most well-validated wide-ranging multi-scales instruments for exploring random response styles, psychopathological malingering and defensiveness.

Butcher and Ben-Porath (2004) list some of the characteristics that contribute to the popularity and extensive use of this wide-ranging psychopathological assessment instrument over its more than sixty years of existence: (1) it includes a large quantity of psychopathological and personality factors that have shown themselves to be reliable, valid and stable over time; (2) it has incorporated new scales to take account of conceptual advances in psychopathology, thus becoming periodically renewed and updated; (3) it permits individual profiles to be checked against an extensive database built up over decades of research; (4) it permits objective interpretation, following standardized norms; and (5) it has been translated and adapted for several languages and countries, thus making possible cross-cultural comparison.

The Spanish adaptation of the MMPI-2 (Butcher, Dahlstrom, Graham, Tellegen & Kaemmer, 1999) includes 7 validity scales, the 10 original basic clinical scales of the MMPI with their 31 specific subscales, 15 content scales and 15 supplementary scales by various authors, which have been added to the instrument over the years. In total, 78 scales and subscales, making the MMPI truly unique in terms of the richness, scope and diversity of the information it provides, as can be seen in Table 1.

PROCEDURE FOR ASSESSMENT OF RESPONSE DISTORSION BY MEANS OF THE MMPI-2

The protocol for assessment of response distortion we shall follow in this article is based on the steps for assessment of MMPI-2 validity proposed by Greene (1997), which essentially consist of five phases, as can be seen in Table 2: once the MMPI-2 has been administered and filled out, the number of omissions (unanswered items) and mistaken responses made by the subject are detected. After this, a rating is given to the consistency and reliability of the responses, and as long as the distortions found do not advise to the contrary, the assessor proceeds to the clinical interpretation of the basic scales and their subscales, content scales and supplementary scales. We shall now consider each of these five phases in more detail.

Administration of the MMPI-2

The MMPI-2, in its complete or standard version (the most widely used and recommended), is a 567-item questionnaire, with a dichotomic true-false response format, designed for application to adults (?18 years), and with an estimated administration time of between 1 and 2 hours for the majority of cases. In patients with severe psychopathology this administration time may extend to between 3 and 4 hours. Exceptionally, there is an abbreviated form of application in which only items 1 to 370 are administered, though its use is not normally advisable, since it only permits the assessor to obtain reliable results for the basic clinical scales and the validity scales (Nichols, 2001).

Detection of omissions or mistaken responses

Once the MMPI-2 has been filled out by the respondent, the first step in the assessment of response distortion is to detect the number of omissions or mistaken responses the

TABLE 1: MMPI-2
SCALES AND SUBSCALES IN THE SPANISH ADAPTATION (MODIFIED FROM GONZALEZ ORDI & GOMEZ SEGURA, 2002)

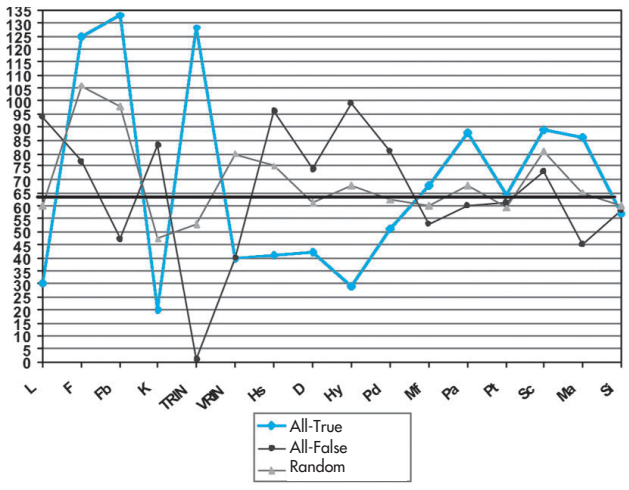
VALIDITY SCALES ?= Cannot-say K= Correction (Subtle defensiveness) TRIN= True Response Inconsistency L= Lie F(b)= Back Infrequency F= Infrequency (Exaggeration of symptoms) VRIN= Variable Response Inconsistency	
BASIC CLINICAL SCALES	**Harris & Lingoes Subscales**
1. Hs= Hypochondria	
2. D= Depression	D1= Subjective depression D2= Psychomotor retardation D3= Physical malfunctioning D4= Mental dullness D5= Brooding
3. Hy= Hysteria	Hy1= Denial of social anxiety Hy2= Need for affection Hy3= Lassitude-malaise Hy4= Somatic complaints Hy5= Inhibition of aggression
4. Pd= Psychopathic deviate	Pd1= Familial discord Pd2= Authority Problems Pd3= Social imperturbability Pd4= Social alienation Pd5= Self-alienation
5. Mf= Masculinity-Femininity	
6. Pa= Paranoia	Pa1= Persecutory ideas Pa2= Poignancy Pa3= Naivete
7. Pt= Psychasthenia	
8. Sc= Schizophrenia	Sc1= Social alienation Sc2= Emotional alienation Sc3= Lack of ego mastery, cognitive Sc4= Lack of ego mastery, conative Sc5= Lack of ego mastery, defective inhibition Sc6= Bizarre sensory experiences
9. Ma= Hypomania	Ma1= Amorality Ma2= Psychomotor acceleration Ma3= Imperturbability Ma4= Ego inflation
0. Si= Social Introversion	**"Si" Subscales** Si1= Shyness/self-consciousness Si2= Social avoidance Si3= Alienation—self and others
CONTENT SCALES ANX= Anxiety OBS= Obsessiveness HEA= Health concerns ANG= Anger ASP= Antisocial practices LSE= Low self-esteem FAM= Family problems TRT= Negative treatment indicators FRS= Fears DEP= Depression BIZ= Bizarre mentation CYN= Cynicism PA= Type A Behaviour SOD= Social discomfort WRK= Work interference	
SUPPLEMENTARY SCALES A= Anxiety MAC-R= MacAndrew Alcoholism Scale-Revised Re= Social responsibility GF= Feminine gender role MDS= Marital distress scale R= Repression O-H= Overcontrolled hostility Mt= College maladjustment PK= Post-traumatic stress disorder scale APS= Addiction potential scale Es= Ego strength Do= Dominance GM= Masculine gender role PS= Post-traumatic stress disorder scale AAS= Addiction acknowledgement scale	

respondent has made, by means of the "?" Scale. Given the length of the instrument, it is frequent for the majority of subjects, whether they present psychopathology or not, to fail to respond to some items or to erroneously mark both responses, true and false. Indeed, Greene (1997) has estimated the expectable range of omissions at between 1 and 15 for normal subjects and between 0-20 for psychopathological patients. In general, the administration protocol is considered to be invalid if the respondent leaves 30 or more items unanswered in the first 370; if these omissions occur after item 370, clinical interpretation can go ahead for the basic clinical scales and validity scales, but not for the rest of the scales. Excessive omission of items is usually considered to be related to patterns of defensiveness, indecision, carelessness, fatigue or inability to read and understand the items (Butcher & Williams, 1992; Graham, 1993).

TABLE 2
PROCEDURE FOR ASSESSMENT OF RESPONSE DISTORTION BY MEANS OF THE MMPI-2 (BASED ON GREENE, 1997)

PHASES	OBJECTIVES	SCALES
Phase 1	Administration of the MMPI-2	Standard: 567 items Abbreviated: 370 items
Phase 2	Detection of omissions and mistaken responses	Cannot-say scale (?)
Phase 3	Assessment of consistency of responses	Random profiles, VRIN and TRIN Scales, F and Fb Scales, tendency to reply true or false
Phase 4	Assessment of reliability of responses 1. Overreporting response patterns 2. Underreporting response patterns	 F, Fb Scales, F-K Index L, K Scales, F-K Index
Phase 5	Clinical interpretation of the MMPI-2	Basic clinical scales and their subscales, content scales and supplementary scales

FIGURE 1
RESPONSE DISTORTION PROFILES IN THE MMPI-2: "ALL-TRUE", "ALL-FALSE" AND "RANDOM" (IN T SCORES)



Assessment of consistency of responses

Once it has been confirmed that the number of omissions and mistaken responses is within the acceptable limits for ensuring the validity of the protocol, the next phase in the assessment of response distortion in the MMPI-2 involves examining whether the subject has responded consistently to the items. Subjects can respond inconsistently to items in various ways: tending to answer "true" (acquiescence), tending to answer "false" (non-acquiescence), or simply responding randomly. The distortion profiles obtained in the MMPI-2 as a result of these three forms of inconsistent response can be seen in Figure 1.

One of the most sensitive scales of the MMPI-2 for detecting patterns of inconsistent response is the Infrequency or F Scale (Clark, Gironda & Young, 2003; Sewell & Rogers, 1994), which, as can be seen in Figure 1, appears as unusually high (above the normative cut-off point, T=65) for the three forms of inconsistent response. The F Scale, and its partner the Back Infrequency or Fb Scale, are instruments designed to detect infrequent response, or "true" responses to items that would receive a "true" response from less than 10% of the normative population; thus, high scores on the F and Fb Scales (T?65) would indicate a significant deviation from normative patterns and a preponderance of non-conventional response styles (Nichols, 2001).

Having confirmed a significantly high score on the F Scale, it remains to identify the direction of the inconsistent response pattern. The TRIN and VRIN are extremely useful for discriminating the characteristics of the supposed inconsistent response pattern.

The TRIN Scale (*True Response Inconsistency Scale*) is designed for detecting whether there is an acquiescent (tendency to reply "true") or non-acquiescent (tendency

to reply "false") distorted pattern of responses. As can be seen in Figure 1, the "all-true" response profile is characterized by markedly high scores on the TRIN Scale, while for the "all-false" response profile TRIN scores are extremely low. The VRIN Scale (*Variable Response Inconsistency Scale*), on the other hand, is designed to specifically detect random response styles, inconsistent with the item content. Indeed, Figure 1 shows clearly how the VRIN score is only unusually high in the case of the "random" response profile, and not in the cases of "all-true" or "all-false". Extreme TRIN scores confirm that the subject has responded to the instrument in a "careless" way, without telling us precisely whether his/her response to the content of the items was consistent or not.

Assessment of reliability of responses

The aim of assessing the reliability of responses is to identify the presence or absence of distorted patterns of response that hinder the correct clinical interpretation of the MMPI-2. Basically, there are two types of pattern to consider in this regard: (1) "Bad image" patterns, overreporting response styles or malingering (*faking bad*), and (2) "Good image" patterns, underreporting response styles, defensiveness or social desirability (*faking good*).

Overreporting response styles

The Infrequency Scales F and Fb (Back Infrequency) have demonstrated their utility for effectively identifying individuals who attempt to present themselves in a bad light, deliberately malingering psychopathological symptoms (Bury & Bagby, 2002; Elhai, Naifeh, Zucker, Gold, Deitsch & Frueh, 2004; Graham, Watts & Timbrook, 1991; Nicholson, Mouton, Bagby, Buis, Peterson & Buidas, 1997; Strong, Greene & Schinka, 2000). In fact, these scales contain items selected for detecting atypical or unusual response styles, whose content refers to bizarre or unusual symptoms of severe psychopathology (Nichols, 2001). As Greene (1997) rightly points out, high scores on these scales may be due to the presence of inconsistent response styles (as we saw in the previous section), to the existence of actual severe psychopathology, or to a pattern of simulation of responses, in which case scores on the basic clinical MMPI-2 scales would be inflated. Low scores would tend to be associated with absence of genuine psychopathology, or with patterns of defensiveness, deflating the scores on the basic clinical MMPI-2 scales. With regard to "faking bad" or overreporting patterns, Butcher (2005) recommends considering the presence of malingering of symptoms when F and/or Fb present T scores of over 100, and VRIN is less than or equal to 79.

Another relevant indicator of faking is Gough's F-K index (1950). This index is obtained by subtracting the raw score on the K validity Scale from the raw score on the F validity Scale (F minus K). If the index is positive after a given cut-off point, the subject will display a tendency to *fake bad*, or deliberately exaggerate symptoms; if the index is negative after a given cut-off point, the subject will show a tendency to the denial or concealment of symptoms – defensiveness or *faking good*.

One of the problems with the F-K index is that there is no consensus among authors in relation to the definitive cut-off points recommended for effectively distinguishing malingerers from non-malingerers, since these cut-off points depend to a large extent on the measures used for obtaining them. Indeed, the scientific literature refers to cut-off points recommended for malingering ranging from +6 to +27, and for defensiveness of between -11 and -20, all in North American samples (see Butcher & Williams, 1992; Greene, 1997; Meyers, Millis & Volkert, 2002; Nichols, 2001; Pope Butcher & Seelen, 1993). As regards the use of the F-K in our own country, Spain, recommended cut-off points have been calculated specifically for malingering and defensiveness for both the MMPI-2 (González Ordi & Gómez Segura, 2002) and the MMPI-A (González Ordi, 2005), based on the samples of reference used for the Spanish adaptation of the two instruments.

Despite the fact that recent research suggests it is no more effective in the detection of faking than the F alone (Bury & Bagby, 2002; Butcher, 2005; Nicholson et al., 1997), the F-K index is sufficiently sensitive to the detection of malingering (it in fact functions much better in this task than in the assessment of defensiveness or denial of symptoms, according to Nichols, 2001) to be worth continuing to take into account as providing additional information, especially as it correlates positively and significantly with the latest generation of self-report instruments for the assessment of malingering, such as the SIMS - *Structured Inventory of Malingered Symptomatology* (Widows & Smith, 2005), and is still widely used in the field of forensic assessment as an aid to detecting the deliberate exaggeration of psychopathological symptoms (Ben-Porath, Graham, Hall, Hirschman & Zaragoza, 1995; González Ordi & Gancedo Rojí, 1999).

Underreporting response styles

The MMPI-2 indices most widely used for assessing underreporting response styles are the L and K Scales (Baer & Miller, 2002).

The *Lie* or L scale consists of 15 items selected with the aim of identifying respondents who deliberately try to present a defensive pattern of responses, in the sense of concealing the most negative aspects of their personality, especially if they obtain T scores of over 66 (Butcher, 2005). T scores of between 60 and 65 would reflect an attempt by the subject to present as favourable an image of him or herself as possible (hiding problems of personal adjustment or the truth), an inability to admit mild moral transgressions and an excessive sense of virtue and morality (Butcher & Williams, 1992; Graham, 1993).

The K scale was developed as a measure of defensiveness and as a factor for correcting the tendency of subjects to deny the presence of psychopathological problems (Butcher, 2005). As a correcting factor it is applied at different values to the basic clinical scales Hs, Pd, Pt, Sc and Ma, for adjusting their final score. As a scale of independent validity, when K presents T scores between 60 and 69 it reflects subjects' tendency to display a favourable image of themselves, minimizing their problems as far as possible; when K presents T scores of 70 or over, it is reasonable to consider that the subject presents a defensive response pattern (Butcher & Williams, 1992; Pope. Butcher & Seelen, 1993).

Finally, the F-K index can also be useful as additional information on subjects' tendency to underreport in their responses to the MMPI-2, as mentioned above.

It is important to point out here that while the scales designed to explore the tendency to overreport in responding to the MMPI-2 (F, Fb, positive F-K index) have received greater research interest, and enjoy more substantial empirical support for their effectiveness in detecting the deliberate exaggeration of psychopathological symptoms and correctly classifying malingerers (*bad fakers*) from non-malingerers, the scales designed for detecting the tendency to present oneself in an exaggeratedly favourable light, dissimulating or concealing symptoms or psychopathological problems (L, K, negative F-K index), do not have such unanimous and generalized empirical support, so that more research effort is required (see Baer & Miller, 2002).

SCALES DERIVED FROM THE MMPI-2 FOR THE ASSESSMENT OF RESPONSE DISTORTION

In addition to the validity scales routinely included in the Spanish version of the MMPI-2, there are a number of scales derived empirically from the MMPI-2 itself, but which did not originally form part of it, and are currently used as sources of additional information for the assessment of response distortion patterns.

Infrequency-Psychopathological Scale [F(p)]

This F(p) Scale (Arbisi & Ben-Porath, 1995) was created as an additional measure of validity for explaining more specifically the high scores found on the MMPI-2 F validity scale. In fact, Arbisi and Ben-Porath (1995) suggest that when F and F(p) present high scores, it is more reasonable to attribute such high scores to a pattern of response simulation than to the presence of actual severe psychopathology, especially if the VRIN and TRIN scale scores are not significantly high. Thus, considering the F and F(p) scales jointly will be more effective for distinguishing between groups with genuine psychopathology and groups of malingerers than using the F scale alone (Bury & Bagby, 2002; Rothke, Friedman, Jaffe, Greene, Wetter, Cole & Baker, 2000; Storm & Graham, 2000; Strong, Greene & Schinka, 2000).

Fake Bad Scale (FBS)

The FBS Scale (Less-Haley, English & Glenn, 1991) was designed specifically with the aim of helping to detect malingering of somatic complaints in the forensic context. It includes items referring to somatic symptoms, sleep disorders, symptoms related to tension and stress, lack of energy, anhedonia, and so on. Although there was a fair amount of research on this scale as a possible instrument for the detection of malingering during the 1990s, recent studies advise against its use as a scale for detecting patterns of malingering, arguing that it is more appropriate as a scale that assesses the tendency for expressing severe psychopathological symptomatology, focusing on more somatic aspects and emotional distress (Butcher, Arbisi, Atlis & McNulty, 2003).

Revised Gough Dissimulation Scale [DsR]

The Revised Gough Dissimulation Scale (Gough, 1957) (DsR) has been employed in the forensic field for distinguishing between subjects who malinger neurotic symptoms, patients with genuine symptoms and normal population. Although less widely employed than other

scales for detecting overreporting response styles, such as the F(p), it is still used as an additional indicator of possible malingering (Bury & Begby, 2002; Storm & Graham, 2000).

Superlative Self-Presentation Scale (S)

The Superlative Self-Presentation or S Scale (Butcher & Han, 1995) was designed to detect subjects who present themselves in a superlative way, exaggeratedly highlighting their positive aspects. In fact, it correlates positively and significantly with the K validity scale (Greene, 1997), providing additional information on the tendency to present a favourable image of oneself, dissimulating or concealing psychopathological symptoms or problems. Thus, Butcher (2005) suggests that when the S scale S presents typical scores over 70 assessors should consider the possible presence of a defensive response pattern.

Social Desirability Scale (Wsd)

The Social desirability or Wsd Scale (Wiggins, 1959) is a classic instrument in the history of the MMPI, and was designed to assess the tendency to present oneself in a socially desirable way. It is one of the scales most traditionally used for exploring underreporting response styles or patterns of defensiveness.

We have tried in this article to explore the possibilities offered by the MMPI-2 for detecting and assessing response distortion and faking. Throughout the last 65 years, the MMPI and its re-standardization, the MMPI-2, as instruments for the assessment of psychopathology, have been constantly changing and renewing themselves, and have paid particular attention to the design of self-report-based strategies for detecting response distortion, which have had, and continue to have, important applied implications for the clinical, forensic and medico-legal contexts.

The MMPI-2 currently offers multiple possibilities for the assessment of overreporting response styles (F, Fb, F(p) scales, positive F-K index, FBS and DsR), underreporting response styles (L, K scales, negative F-K index, S and Wsd scales) and random response styles ("?", F, Fb, VRIN and TRIN scales). Use of the information deriving from these scales facilitates detection of the response distortion that may occur when a subject is administered this instrument, especially if that subject has the intention of faking. However, to definitively establish the presence of response distortion, the professional should take into account other information sources, as well as the MMPI-2, since the study of faking necessarily requires detailed multimethod/multisystem psychological assessment (González Ordi & Gancedo Rojí, 1999).

REFERENCES

Arbisi, P.A. & Ben-Porath, Y.S. (1995). On MMPI-2 infrequent response scale for use with psychopathological populations: The Infrequent Psychopathology Scale F(p). *Psychological Assessment, 7*, 424-431.

Baer, R.A. & Miller, J. (2002). Underreporting of psychopathology on the MMPI-2: a meta-analytic review. *Psychological Assessment, 14,* 16-26.

Baer, R.A., Rinaldo, J.C. & Berry, D.T.R. (2003). Self-report distortions (including faking, lying, malingering, social desirability). In R. Fernández-Ballesteros (Ed.), *Encyclopedia of Psychological Assessment. Vol. 2* (pp. 861-866). London: SAGE.

Bartol, C.R. & Bartol, A.M. (2004). *Introduction to forensic psychology*. London: SAGE. Ben-Porath, Y.S., Graham, J.R., Hall, G., Hirschman, R. & Zaragoza, M.S. (Eds.) (1995). *Forensic applications of the MMPI-2.* London: SAGE.

Boccaccini, M.T. & Brodsky, S. (1999). Diagnostic test usage by forensic psychologists in emotional injury cases. *Professional Psychology: Research and Practice, 30*, 253-259.

Bury, A.S. & Bagby, R.M. (2002). The detection of feigned uncoached and coached posttraumatic stress disorder with the MMPI-2 in a sample of workplace accident victims. *Psychological Assessment, 14*, 472-484.

Butcher, J.N. (2005). Assessing MMPI-2 profile validity. In G.P. Koocher, J.C. Norcross & S.S. Hill III (Eds.), *Psychologists' desk reference*. 2nd edition (pp. 128-132). New York: Oxford University Press.

Butcher, J.N., Arbisi, P.A., Atlis, M.M. & McNulty, J.L. (2003). The construct validity of the Less-Haley Fake Bad Scale. Does this scale measuring somatic malingering or feigned emotional distress? *Archives of Clinical Neuropsychology, 18,* 473-485.

Butcher, J.N. & Ben-Porath, Y.S. (2004). Use of the MMPI-2 in medico-legal evaluations: An alternative interpretation for the Senior and Douglas (2001) critique. *Australian Psychologist, 39*, 44-50.

Butcher, J.N., Dahlstrom, W.G., Graham, J.R., Tellegen, A. & Kaemmer, B. (1989). *MMPI-2: Manual of administration and scoring.* Minneapolis, MN: University of Minnesota Press.

Butcher, J.N., Dahlstrom, W.G., Graham, J.R., Tellegen, A. & Kaemmer, B. (1999). *MMPI-2: Inventario Multifásico de Personalidad de Minnesota-2. Manual.* (Spanish adaptación by A. Avila-Espada & F. Jiménez-Gómez). Madrid: TEA Ediciones.

Butcher, J.N. & Han, K. (1995). Development of a MMPI-2 scale to assess the presentation of self in a superlative manner: The S scale. In J.N. Butcher & C.D. Spielberger (Eds.), *Advances in personality assessment. Vol. 10* (pp. 25-50). Hillsdale, NJ: Erlbaum.

Butcher, J.N. & Williams, C.L. (1992). *Essentials of MMPI-2 and MMPI-A interpretation.* Minneapolis, MN: University of Minnesota Press.

Butcher, J.N., Williams, C.L., Graham, J.R., Archer, R.P., Tellegen, A., Ben-Porath, Y.S. & Kaemmer, B. (1992). *MMPI-A (Minnesota Multiphasic Personality Inventory-Adolescent): Manual for administration, scoring, and interpretation.* Minneapolis, MN: University of Minnesota Press.

Clark, M.E., Gironda, R.J. & Young, R.W. (2003). Detection of back random responding: effectiveness of MMPI-2 and Personality Assessment Inventory validity indices. *Psychological Assessment, 15,* 223-234.

Elhai, J.D., Naifeh, J.A., Zucker, I.S., Gold, S.V., Deitsch, S.E. & Frueh, B.C. (2004). Discriminating malingered from genuine civilian posttraumatic stress disorder: A validation of the three MMPI-2 infrequency scales (F, Fp, and Fptsd). *Assessment, 11,* 139-144.

González Ordi, H. (2005). *Informe interpretativo informatizado del Inventario Multifásico de Personalidad de Minnesota para adolescentes (MMPI-A): Manual.* Madrid: TEA Ediciones.

González Ordi, H. & Gómez Segura, J. (2002). *Informe interpretativo informatizado del Inventario Multifásico de Personalidad de Minnesota-2 (MMPI-2): Manual.* Madrid: TEA Ediciones.

González Ordi, H. & Gancedo Rojí, M. (1999). Evaluación de la simulación de respuesta: diagnóstico, técnicas y procedimientos. In A. Ruano Hernández, J.M. Muñoz Céspedes & C. Cid Rojo (Coords.), *Psicología de la rehabilitación* (pp. 405-441). Madrid: Fundación MAPFRE-Medicina.

Gough, H.G. (1950). The F minus K dissimulation index for the MMPI. *Journal of Consulting Psychology, 14,* 408-413.

Gough, H.G. (1957). *Manual for the California Psychological Inventory.* Palo Alto, CA: Consulting Psychologists Press.

Graham, J.R. (1993). *MMPI-2: Assessing personality and psychopathology.* New York: Oxford University Press.

Graham, J.R., Watts, D. & Timbrook, R.E. (1991). Detecting fake-good and fake-bad MMPI-2 profiles. *Journal of Personality Assessment, 57,* 264-277.

Greene, R.L. (1997). Assessment of malingering and defensiveness by multiscale personality inventories. In R. Rogers (Ed.), *Clinical assessment of malingering and deception* (pp. 169-207). New York: The Guilford Press.

Guriel, J. & Fremouw, W. (2003). Assessing malingered posttraumatic stress disorder: A clinical review. *Clinical Psychology Review, 23,* 881-904.

Hathaway, S.R. & McKinley, J.C. (1940). A multiphasic personality schedule (Minnesota): I. Construction of the schedule. *Journal of Psychology, 10,* 249-254.

Kashy, D.A. & DePaulo, B.M. (1996). Who lies? *Journal of Personality and Social Psychology, 70,* 1037-1051.

Less-Haley, P.R., English, L.T. & Glenn, W.J. (1991). A fake bad scale on the MMPI-2 for personal-injury claimants. *Psychological Reports, 68,* 203-210.

Lubin, B., Larsen, R.M. & Matarazzo, J.D. (1984). Patterns of psychological test usage in the United States: 1935-1982. *American Psychologist, 39,* 451-454.

Martínez Selva, J.M. (2005). *La psicología de la mentira.* Barcelona: Paidós.

Meyers, J.E., Millis, S.R. & Volkert, K. (2002). A validity index for the MMPI-2. *Archives of Clinical Neuropsychology, 17,* 157-169.

Miguel-Tobal, J.J. (1993). Cuestionarios, inventarios y escalas. In F.J. Labrador, J.A. Cruzado & M. Muñoz (Eds.), *Manual de técnicas de modificación y terapia de conducta* (pp. 151-180). Madrid: Pirámide.

Nichols, D.S. (2001). *Essentials of MMPI-2 assessment.* New York: John Wiley & Sons.

Nicholson, R.A., Mouton, G.J., Bagby, R.M., Buis, T., Peterson, S.A. & Buigas, R.A. (1997). Utility of MMPI-2 indicators of response distortion: receiver operating characteristics analysis. *Psychological Assessment, 9,* 471-479.

Piotrowski, C. (1998). Assessment of pain: A survey of practicing clinicians. *Perceptual and Motor Skills, 86,* 181-182.

Pope, K.S., Butcher, J.N. & Seelen, J. (1993). *The MMPI, MMPI-2 & MMPI-A in court. A practical guide for expert witnesses and attorneys.* Washington, DC: American Psychological Association.

Rogers, R. (1997). Current status of clinical methods. In R. Rogers (Ed.), *Clinical assessment of malingering and deception* (pp. 373-397). New York: The Guilford Press.

Rogers, R., Sewell, K.W., Martin, M.A. & Vitacco, M.J. (2003). Detection of feigned mental disorders: A meta-analysis of the MMPI-2 and malingering. *Assessment, 10,* 160-177.

Rothke, S.E., Friedman, A.F., Jaffe, A.M., Greene, R.L., Wetter, M.W., Cole, P. & Baker, K. (2000). Normative data for the F(p) scale of the MMPI-2: implications for clinical and forensic assessment of malingering. *Psychological Assessment, 12,* 335-340.

Sewell, K.W. & Rogers, R. (1994). Response consistency and the MMPI-2: Development of a simplified screening scale. *Assessment, 1,* 293-299.

Strong, D.R., Greene, R.L. & Schinka, J.A. (2000). A taxometric analysis of MMPI-2 infrequency scales [F and F(p)] in clinical settings. *Psychological Assessment, 12,* 166-173.

Storm, J. & Graham, J.R. (2000). Detection of coached general malingering on the MMPI-2. *Psychological Assessment, 12,* 158-165.

Vrij, A. (2001). *Detecting lies and deceit.* New York: John Wiley & Sons.

Widows, M.R. & Smith, G.P. (2005). *SIMS: Structured Inventory of Malingered Symptomatology. Professional manual.* Lutz, FL: PAR: Psychological Assessment Resources.

Wiggins, J.S. (1959). Interrelationship among MMPI measures of dissimulation under standard and social desirability instructions. *Journal of Consulting Psychology, 23,* 419-427.