

Frequency of MMPI-2 scores in forensic evaluations¹

By

James N. Butcher
Professor
University of Minnesota

Occasionally a psychologist may be faced with a puzzling MMPI-2 profile and need to make sense out of the sharp peaks and valleys etched on the paper in an unusual pattern never before seen. An examination of the available clinical scale cookbook resources provides little background information because the particular profile code turns out to be one of those that seems not to be well explored by the past MMPI researchers. What next? What information can the psychologist find to obtain an empirical perspective on this particular profile code? The interpreter can, of course, resort to generic scale descriptions in developing conclusions. However, clinical profile interpretation can be more effective and the conclusions drawn more specific to the case if relative frequency or base rate information is also available to put the profile into empirical context (Bathurst, Gottfried, & Gottfried, 1997).

The base rate of a population was described by Finn & Kamphuis, (1995) as:
What are your chances of being hit by lightning? Of winning a lottery? Of developing schizophrenia? The probabilities of these events, usually expressed in a percentage, are called base rates. Base rates are often calculated in clinical

settings. Thus, if five out of every one hundred of your clients try to commit suicide, the base rate of suicide attempts in your practice is 5 percent (p. 224).

Over the past two years we have been accumulating empirical data on a broad base of forensic cases from various court settings in order to provide base rate information for MMPI-2 interpretation in several forensic settings. Frequency information can be employed as a means of providing a relevant context for MMPI-2 profiles in family custody, personal injury, and criminal cases. Some of the main trends that have come to light in this study will be summarized below.

FAMILY CUSTODY DATA

The data employed in the family custody base rate sample were provided by 19 clinicians who evaluated men and women in family custody disputes from varying practices across the United States and from Australia.

Type of data obtained

A total of 1,799 cases (881 men and 918 women) that were being assessed in a broad range of family custody cases were included in the analysis.²The data from these diverse cases have provided a rich picture of custody based MMPI-2 profiles that enables practitioners to appraise the profile context more clearly.

¹ An extended report of this research was published in the MMPI-2 Newsletter. MMPI-2 Workshops, University of Minnesota, 1997.

² Stephen B. Bindler, Coreen Boeding, James Butcher, David W. Bruce, Shawn Fingerle, Albert Gibbs, Laura Keller, Betty King, Jean LaCrosse, Itzhak Matusiak, Timothy Murphy, Cynthia Neuman, Jacob Panzerella, Linda Paul, Stephan Podrygula, Mary E. Rekuski, Paul Schenk, Thomas Walken, and Marcia Young.

Validity patterns in family custody cases

A frustrating situation that sometimes faces the psychologist who is conducting a custody evaluation is that the profiles on which important decisions are to be based are often difficult to interpret because of the low degree of cooperation on the part of the persons being evaluated. The situation that is frequently encountered is one in which the parents, who are very concerned over their social image, produce extremely defensive profiles. When warring parents take the MMPI-2 in a child custody evaluation they tend to present an overly positive self-appraisal, with high scores on the L or K scales. Most of us who have conducted child custody evaluations have experienced the situation in which high defensive profiles and low ranging clinical scale elevations were obtained. It is not unusual for some psychologists, on the basis of the cases they have seen in their own practice, to be tempted to conclude that all custody derived profiles are invalid ones leaving them with little solid information concerning psychopathology to go on in the evaluation.

Are all custody profiles defensive?

What then do the base rates of child custody profiles have to say about the overall defensiveness of parents being assessed in custody cases? Does the impression that some practitioners hold, that custody cases invariably produce invalid records, find support in the custody sample? Defensive? Yes. Invalid defensive? Not as a general rule. For example the mean score on the L scale for the custody sample as a whole was 56.5 or less than one standard deviation above the mean of the normal sample. The mean value of the K score for the custody sample was 56.5. The mean value for the S scale, the most sensitive measure of test defensiveness in this group, was 58.8 for the combined custody

sample. As a group, then custody cases do not always invalidate the test. On the contrary, the majority of cases in the sample actually produce interpretable profiles.

Do family custody litigants produce clinical profiles that reflect psychopathology?

Similarly, it is easy in family custody evaluations to get the impression that there is usually no clinical scale elevation to be found among family custody cases. This too is an incorrect assumption. While it is true that the majority of people undergoing custody evaluations do not score in the pathological range it is also true that almost 20 percent of the men and 23.5 percent of women had well defined clinical scale scores above a T score of 65—that is, within the interpretable, clinical range. These percentages are comparable to findings of the NIMH Epidemiological Study (Regier, Boyd, Burke, Rae, Myers, Kramer, Robins, George, Karno, & Locke, 1988) on the incidence of mental disorders in the general population. Even well defined two point MMPI-2 codes were found for 10.5% of men and 11.9% of women. There are clear trends in the scales that are elevated with the Pa scale occurring as the most prominent spike in men (8.5%) and in women (7.6%). The second most prominent spike score for men is Ma (3.2%) and for women Pd (6.0%).

Although the majority of individuals undergoing custody evaluations are not reporting extensive mental health problems, as one would find in a mental health center population, a substantial number of these people do show psychopathology on the MMPI-2. This sensitivity to problems is likely the reason that the instrument is the most widely used assessment measure in custody cases (Keilen & Bloom, 1986).

PERSONAL INJURY DATA

A total of 157 cases that were being assessed in a broad range of personal injury cases were included in the analysis.³

The data obtained for the personal injury case frequency study were provided by 9 forensic mental health practitioners who see a variety of cases. Cases that were assessed from the perspective of the plaintiff's side as well as from the defense were included in the study. The cases provided in the research sample centered on a variety of complaints including: work place harassment, sexual harassment, age discrimination, "slip and fall" injury complaints, post-traumatic injury from incidents such as accidents, rape, and work place trauma.

Validity patterns in personal injury litigation cases

Interpretation of MMPI-2 protocols in personal injury cases is complicated by the fact that individual motivation to present in a particular manner is much more complex in this setting than in family custody evaluations. Some litigants are motivated to present themselves in a defensive manner; however, others are motivated to present themselves as much more disturbed psychologically than they actually are in order to appear disabled. In order to obtain a clearer idea about the interpretive meaning of profiles in personal injury cases it is important to evaluate possibly differing motivations presented by the personal injury cases. The data on personal injury cases can be difficult to interpret because of the low degree of cooperation on the part of many persons being evaluated. One situation often encountered is one in which the litigants produce extremely defensive profiles, that is, deny psychological problems in order to produce a "credible" physical

³ Personal injury cases were provided by: Marian Belciug, James Butcher, Kirk Heilbrun, Barbara Long, Itzhak Matusiak, Owen Nelson, Jacob Panzarella, Stephan Podrygula, and Karen Schiltz

problem. What then do the base rates of personal injury cases tell us about the relatively defensive or exaggerated profiles found in these cases? The range of scale elevations of the MMPI-2 L, F, & K scores is shown in Figures 1, 2, and 3 respectively. It appears that each of the scales has a broad distribution of scores on these control scales unlike the custody cases which tend to be skewed for the defensiveness indicators and bunched below T=50 for the F scale scores. However, this seemingly broader range of scores results from mixing the defensive (positive malingering cases) with the exaggerated records.

Insert figures 1-3 here

It is important to group together those cases in which there is a motive to present in a highly favorable way versus those who have the desire to appear severely psychologically disabled. For the analyses in the personal injury cases we chose to split the group in terms of whether their response pattern reflected a defensive or exaggerated response set. When the profiles are treated separately the clinical patterns become more interpretable.

Range of clinical scale elevations in personal injury cases

When the total sample is considered without regard to response attitudes three scales receive high prominence. The Hy scale is the highest peak score with 17.2 percent of the cases producing elevated and well-defined peak scores; the D scale is the second most frequent peak with 7.6% frequency as an elevated and well-defined peak; and the Pa score is the third highest spike score occurring with 6.4% frequency as an elevated and well-defined score. However, when the response attitudes are taken into consideration (that is when the profiles are grouped according to defensive (likely feigned) versus

exaggerated (likely malingered psychological symptoms) then the picture changes markedly: The frequency of well defined Hy scores increases to 22.2 percent in the defensive (possibly feigned symptom group); however, when the exaggerated (possibly exaggerated-malingered) profiles are grouped together the profile peak becomes one of high Pa (14.6% have well-defined scores at or above a T of 65).

These data suggest that it is important to keep the litigant's motivation in perspective when interpreting MMPI-2 profiles in personal injury cases. (See Butcher & Miller, 2005; Long, et al. 2004).

CORRECTIONAL DATA

The data employed in the correctional analyses were provided by 13 clinicians who evaluated men in correctional facilities in the United States and Canada.⁴ A total of 322 men who were being assessed in a broad range of cases were included in the analysis. In addition, Dr. Jose Cabiya provided a large sample of inmates from the Puerto Rican Prison System who took the MMPI-2 in Spanish. These samples will be described separately.

Validity patterns in correctional cases

Extensive data have been published with respect to the frequency of MMPI scores in correctional settings. Moreover, some studies have involved the MMPI-2 (Megargee, 1995)

What do the base rates of correctional cases provide about the relative response sets employed by convicted felons being assessed in prison? First, in the base-rate

sample a total of 61 men produced technically invalid profiles in this setting and was excluded from further analyses. These were eliminated because of high F, F (B), VRIN or TRIN. Once these invalid records were eliminated the remaining profiles were examined as to validity pattern. The mean validity scale performance for the group was as follows: L= 55.9; F= 63.8; K= 46.5 and S=45.8.

Do convicted felons produce a common profile type

Some forensic practitioners have noted a preponderance of Pd scale elevations among incarcerated felons. This is a generally correct assumption. The Pd scale is a predominant score of people undergoing psychological evaluations in correctional contexts—30.3% of the cases had Pd as the high point score and 16.9% of these were well-defined peaks at or greater than a T score of 65. The mean Pd score for the correctional sample was 67.4 with the Pa scale close behind at 64.1. The majority of individuals undergoing evaluations in this sample would be considered as having some type of personality disorders on the MMPI-2.

Hispanic inmates

Cabiya (1997) has conducted an extensive evaluation of 321 inmates in San Juan, Puerto Rico using the Spanish language version of the MMPI-2. He reported a somewhat different pattern of scores among inmates in the Puerto Rican prison system than those reported on the United States mainland. The highest prevalence of well defined codetypes at or above a T score of 65 in this sample were 6-8/8-6 (10.3%) and 8-9/9-8 (5.0%). He found that well defined single point scores that were at or above a T score of 65 were: Sc (14.3%), Pa (9.3%), Ma (8.1%) and Pd (5.3%).

⁴ Correctional cases were provided by: Yossef Ben-Porath, Stephen B. Bindler, Richard Brimer, James Butcher, Maria Garrido, Kirk Heilbrun, Reneau Kennedy, Laura Keller, Itzhak Matusiak, Cynthia

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Table 1

Percent of males (n=868) and females (n=911) in the custody sample with One-point code-types, both well defined (i.e., highest T-score at or above 65 And at least five points above the second highest score) and not well-defined.

Scale	Well-defined		Not well-defined	
	Males	Females	Males	Females
1 (Hs)	0.6	1.1	6.1	6.9
2 (D)	0.8	0.9	8.3	5.7
3 (Hy)	3.2	4.3	22.1	22.2
4 (Pd)	2.9	6.0	18.3	21.6
6 (Pa)	8.5	7.6	29.4	26.6
7 (Pt)	0.3	0.1	3.8	3.3
8 (Sc)	0.1	0.2	1.2	1.4
9 (Ma)	3.2	3.3	10.8	12.3
None	80.3	76.5		

Table 2

Percent of males (n=868) and females (n=911) in the custody sample with two-point code-types, both well defined (i.e., highest T-scores at or above 65 and at least five points above the third highest score) and not well-defined.

Code	Well-defined		Not well-defined	
	Males	Females	Males	Females
12/21	0.3	0.2	2.6	1.5
13/31	1.7	2.4	9.2	10.4
14/41	0.0	0.1	2.5	3.4
16/61	0.0	0.0	2.2	2.6
17/71	0.1	0.1	0.7	1.1
18/81	0.0	0.1	0.5	0.8
19/91	0.0	0.1	1.5	1.1
23/32	0.0	0.0	3.3	2.4
24/42	0.0	0.3	2.6	2.1
26/62	0.5	0.3	5.0	3.7
27/72	0.1	0.3	2.8	1.4
28/82	0.0	0.0	0.2	0.1
29/92	0.0	0.0	2.0	1.4
34/43	1.2	0.9	12.1	10.3
36/63	0.5	1.2	13.0	14.3
37/73	0.0	0.0	1.4	1.3
38/83	0.0	0.0	0.3	0.7
39/93	0.1	0.4	3.7	4.6
46/64	2.0	3.2	12.1	13.3
47/74	0.2	0.1	1.7	1.8
48/84	0.0	0.0	0.5	3.8
49/94	0.6	1.0	4.7	5.6
67/76	0.5	0.2	2.9	2.5
68/86	0.2	0.1	1.5	1.0
69/96	2.1	0.4	8.5	6.3
78/87	0.1	0.0	0.7	0.8

79/97	0.3	1.0	0.9	0.4
89/98	0.0	1.0	0.8	1.2
None	89.5	88.1		

Table 3

Percent of the full personal injury sample, those with elevations on L or K, and those with elevations on F with one-point code-types, both well defined (i.e., highest T-score at or above 65 and at least five points Above the second highest score) and not well-defined.

Scale	Full Sample (n=157)		High L or K (n=36)		High F (n=41)	
	Defined	Not	Defined	Not	Defined	Not
1 (Hs)	5.1	20.4	5.6	27.8	2.4	14.6
2 (D)	7.6	21.0	5.6	11.1	7.3	34.1
3 (Hy)	17.2	30.6	22.2	33.3	9.8	19.5
4 (Pd)	0.6	5.7	0.0	16.7	0.0	2.4
6 (Pa)	6.4	13.4	2.8	2.8	14.6	24.4
7 (Pt)	0.6	3.2	0.0	0.0	0.0	0.0
8 (Sc)	0.6	2.5	0.0	2.8	2.4	4.9
9 (Ma)	0.6	3.2	0.0	5.6	0.0	0.0
None	61.1		63.9		63.4	

Table 4

Percent of the full personal injury sample (n=157) with two-point codetypes, both well defined (i.e., highest T-scores at or above 65 and at least five points above the third highest score) and not well-defined.

Code	Well-defined	Not well-defined
12/21	0.6	8.3
13/31	18.5	29.9
14/41	0.0	1.9
16/61	0.6	0.6
17/71	0.0	1.9
18/81	0.0	2.5
19/91	0.0	1.3
23/32	4.5	10.8
24/42	0.0	2.5
26/62	1.9	7.6
27/72	0.6	3.2
28/82	0.6	3.2
29/92	0.0	1.3
34/43	0.0	4.5
36/63	1.9	5.7
37/73	0.0	0.0
38/83	0.6	3.2
39/93	0.0	1.3
46/64	0.0	1.3
47/74	0.0	0.0
48/84	0.0	1.3
49/94	0.0	0.6
67/76	0.0	0.6
68/86	1.3	3.8
69/96	0.0	1.3
78/87	0.6	1.3

79/97	0.0	0.0
89/98	0.0	0.0
None	68.2	

Table 5

The number and percentage of the sample of men in prison with one-point codetypes, both well defined (i.e., above 65 and more than 5 points higher than second highest) and not well-defined (i.e., highest score, regardless of level of elevation or distance to second highest).

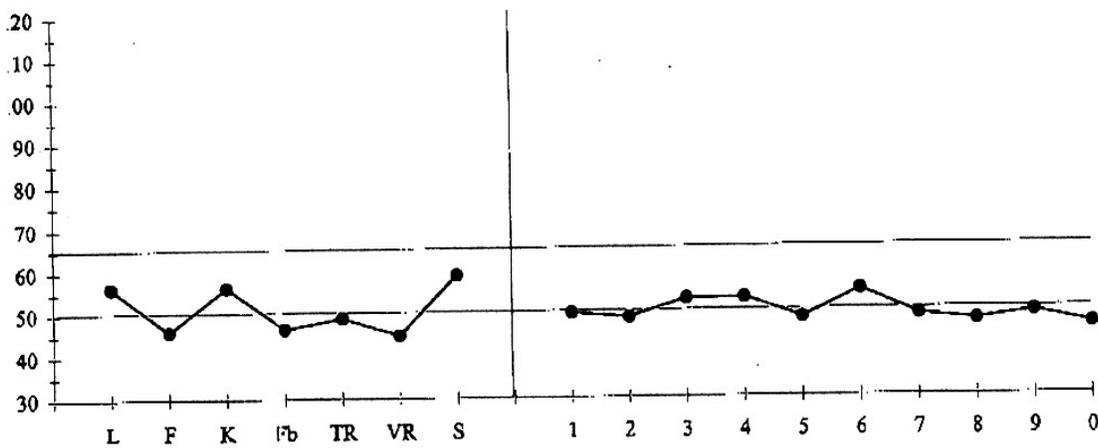
<u>Scale</u>	<u>Well-Defined</u>		<u>Not Well-Defined</u>	
	<u>Frequency</u>	<u>Percentage</u>	<u>Frequency</u>	<u>Percentage</u>
Hs	7	2.7	28	10.7
D	5	1.9	26	10.0
Hy	3	1.1	10	3.8
Pd	44	16.9	79	30.3
Pa	29	11.1	56	21.5
Pt	5	1.9	14	5.4
Sc	7	2.7	15	5.7
Ma	17	6.5	33	12.6
None	144	55.2		

Table 6

The number and percentage of people in the correctional sample with two-point codetypes, both well defined (i.e., above 65 and more than 5 points higher than third highest) and not well-defined (i.e., highest two scores, regardless of level of elevation or distance to third highest).

Scale	Well-Defined		Not Well-Defined	
	Frequency	Percentage	Frequency	Percentage
12/21	1	0.4	10	3.8
13/31	8	3.1	16	6.1
14/41	3	1.1	18	6.9
16/61	0	0.0	8	3.1
17/71	1	0.4	1	0.4
18/81	0	0.0	5	1.9
19/91	1	0.4	3	1.1
23/32	1	0.4	3	1.1
24/42	6	2.3	23	8.8
26/62	2	0.8	9	3.4
27/72	2	0.8	8	3.1
28/82	0	0.0	0	0.0
29/92	0	0.0	6	2.3
34/43	3	1.1	10	3.8
36/63	0	0.0	2	0.8
37/73	0	0.0	0	0.0
38/83	0	0.0	2	0.8
39/93	0	0.0	0	0.0
46/64	15	5.7	37	14.2
47/74	1	0.4	3	1.1
48/84	4	1.5	10	3.8
49/94	19	7.3	33	12.6
67/76	3	1.1	13	5.0
68/86	6	2.3	11	4.2
69/96	2	0.8	11	4.2
78/87	1	0.4	7	2.7
79/97	0	0.0	2	0.8
89/98	5	1.9	10	3.8
None	177	67.8		

MMPI-2 Basic Scales

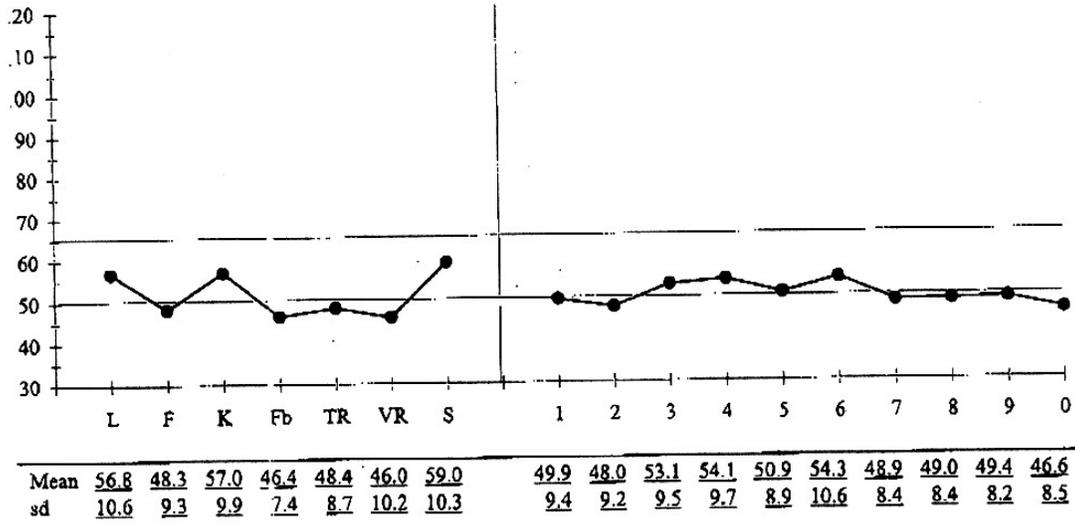


Mean	<u>56.3</u>	<u>45.8</u>	<u>56.3</u>	<u>46.5</u>	<u>48.9</u>	<u>44.8</u>	<u>59.0</u>	<u>49.8</u>	<u>48.7</u>	<u>53.0</u>	<u>53.1</u>	<u>48.3</u>	<u>54.8</u>	<u>48.9</u>	<u>47.5</u>	<u>49.3</u>	<u>46.4</u>
sd	<u>10.9</u>	<u>7.7</u>	<u>9.7</u>	<u>7.6</u>	<u>8.3</u>	<u>9.4</u>	<u>10.2</u>	<u>8.0</u>	<u>8.3</u>	<u>8.6</u>	<u>8.4</u>	<u>8.9</u>	<u>10.3</u>	<u>8.0</u>	<u>7.6</u>	<u>8.5</u>	<u>8.9</u>

Men in the custody sample (n=868)

Fig 1

MMPI-2 Basic Scales



Women in the custody sample (n=911)

Figure 2

MMPI-2 Basic Scales

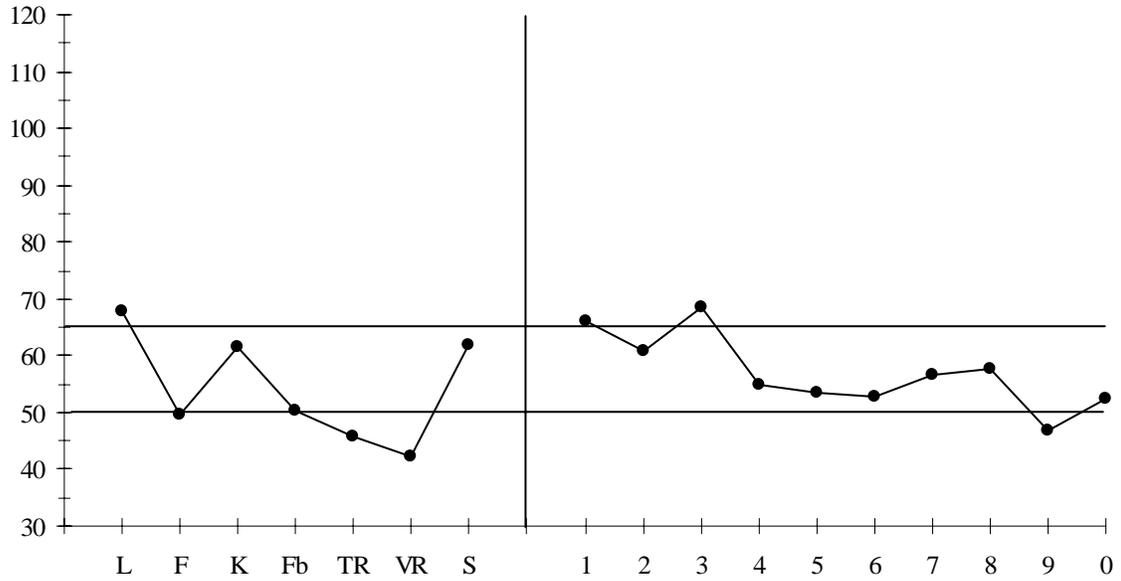
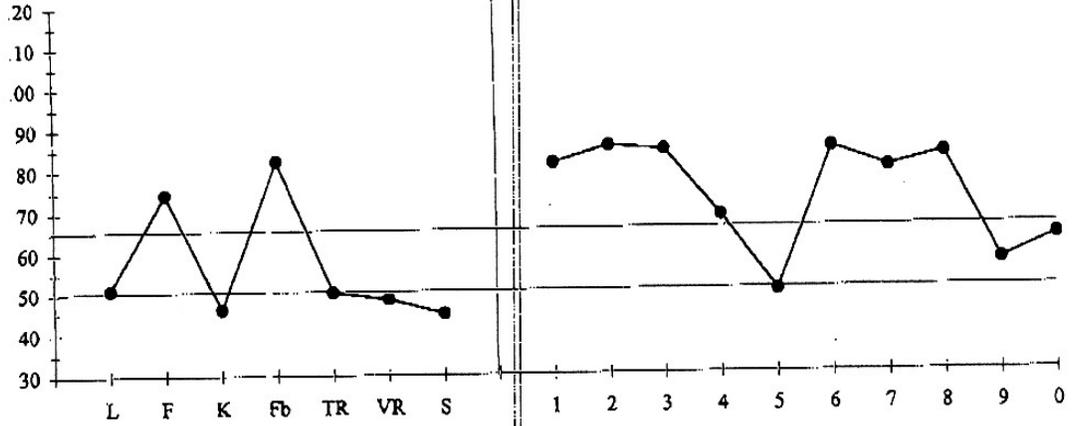


Figure 3 Personal injury sample with defensive profiles-elevations on L, K and S.

MMPI-2 Basic Scales

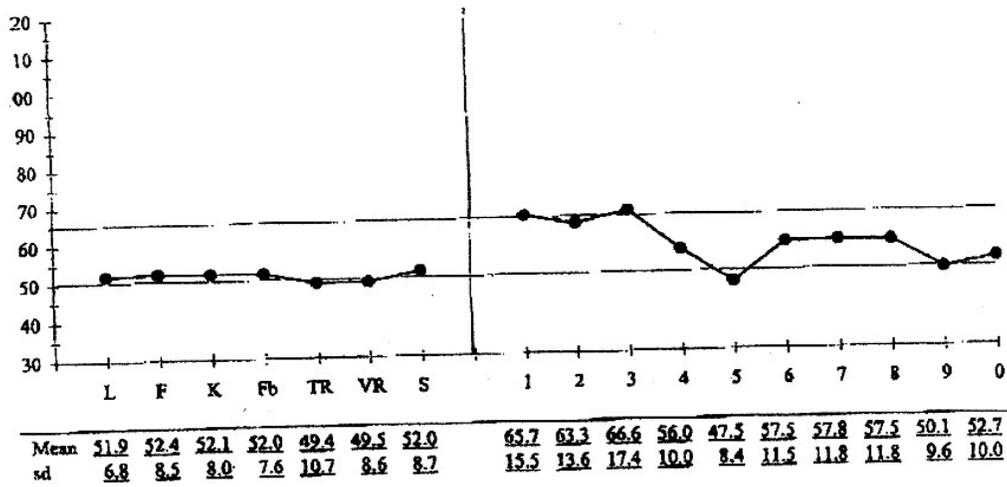


Mean	<u>51.0</u>	<u>74.3</u>	<u>46.0</u>	<u>82.2</u>	<u>50.1</u>	<u>48.3</u>	<u>44.7</u>	<u>81.1</u>	<u>85.0</u>	<u>83.9</u>	<u>68.0</u>	<u>49.7</u>	<u>84.0</u>	<u>79.2</u>	<u>82.4</u>	<u>56.6</u>	<u>62.4</u>
sd	<u>9.6</u>	<u>15.8</u>	<u>9.0</u>	<u>15.5</u>	<u>15.0</u>	<u>9.8</u>	<u>9.7</u>	<u>13.1</u>	<u>15.4</u>	<u>17.8</u>	<u>13.7</u>	<u>8.9</u>	<u>16.0</u>	<u>12.2</u>	<u>13.2</u>	<u>10.1</u>	<u>12.3</u>

Personal Injury Sample with elevations on F or Fb (i.e., F or Fb greater than or equal to 65 and greater than L and K)
 N=41 (12 men and 29 women)

Fig 4

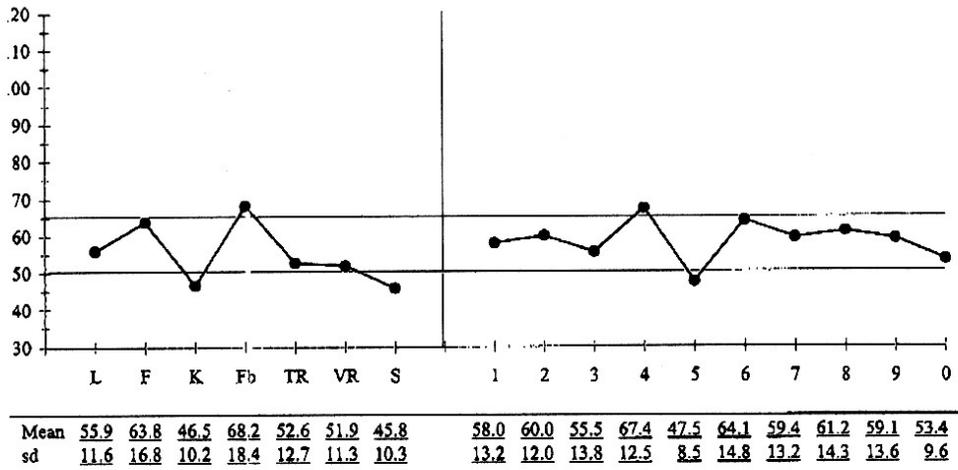
MMPI-2 Basic Scales



Personal Injury Sample with no elevated scores on L, F, K, or Fb (i.e., all scores less than 65)
 N=80 (33 men and 47 women)

Figure 5

MMPI-2 Basic Scales



Prison Sample (n=261)

Fig 6