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RORSCHACH FINDINGS CONCERNING CLOSED HEAD INJURY PATIENTS

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This article presents some Rorschach data for 60 adult closed head injury (CHI) patients who were tested between 3 and 6 weeks after the trauma. The data are discussed in terms of the apparent assets and liabilities frequently found among CHI patients and the importance of these findings in the context of management and rehabilitation.

A huge number of people sustain a traumatic brain injury (TBI) each year, the results of which often lead to any combination of physical, intellectual, social, and emotional difficulties. Levin, Benton and Grossman (1982) have documented some of the cognitive deficits, emotional disturbances, and personality changes that result from TBI and suggest that any or all of these can lead to poor occupational and social functioning. Numerous authors, such as Kay (1992), have noted that neuropsychologists are often requested to make prognostic statements regarding a patient's future level of psychosocial functioning even though information concerning the relationship between a patient's cognitive and psychosocial functioning is in a very preliminary stage. In effect, neuropsychologists are often requested to identify cognitive, behavioral, and affective deficits that exist following a TBI and to differentiate the extent to which these deficits are due directly to the brain injury and to what extent they represent preexisting conditions.

An approach used by most neuropsychologists confronted with these questions is to include in the test battery administered to the patient some measure designed to evaluate personality structure. Zillmer (1994), for example, has reported on

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a survey of the members of the International Neuropsychological Association regarding personality test usage. Of those who responded, approximately 50% reported using the Minnesota Multiphasic Personality Inventory (MMPI; Hathaway & McKinley, 1940) and approximately 25% reported using the Rorschach Inkblot (Rorschach; Rorschach, 1942) test. Unfortunately, the absence of any pretrauma data concerning personality test performance makes it, at best, difficult to use the results from either of these instruments precisely in attempting to understand what changes in personality, apparent liabilities, or both, in psychological processes may have resulted from the trauma and what conditions may have been preexisting. Sometimes, however, personality test data, collected posttrauma, concerning a group of neurologically impaired patients does permit speculation concerning some TBI consequences.

For example, Ellis and Zahn (1985) reported some Rorschach findings for a group of 35 young adults with severe closed head injury (CHI), which they operationally defined as a blunt trauma to the head resulting in a coma of at least 5 day duration. The length of coma for these patients ranged from 5 to 180 days with an average duration of 34 days. Although Ellis and Zahn do not provide descriptive statistics for all Rorschach variables, they do provide mean and standard deviation data for 18 variables from which a step-wise discriminate function analysis identified a group of variables that correctly differentiated all 35 CHI patients from a similarly sized group of adult nonpatients. Their findings indicate that the CHI group differed significantly from the nonpatient control group for number of responses (*R*), mean *X*+% and *F*+%, lower affective ratio (*Afr*), the relation of whole (*W*) to (*D*) responses, a lower average number of popular answers, a significantly lower number of color responses, and a significantly higher value for Lambda (*L*). They also reported substantial thought process confusion and cognitive disarray as represented in a substantial number of critical special scores.

The Ellis and Zahn (1985) findings are somewhat similar to those reported by Piotrowski (1936) nearly 50 years earlier; however, it is important to caution that both the Piotrowski and Ellis and Zahn studies used severely impaired participants as their target populations. When these same "signs" are applied to populations in which impairment is mild or moderate, as contrasted with severe, a differentiation of the neurologically impaired from control subjects usually fails to occur. For instance, Aita, Reitan, and Ruth (1947) found that most of the Piotrowski signs did not correctly differentiate mild or moderate brain injury subjects from other groups.

Baker (1956) presented an excellent review of more than 50 studies published between 1936 and 1952 and concluded that most indications of the presence of organic brain involvement will probably manifest in Rorschach protocols more qualitatively than in rigid quantitative sign form. In other words, participants with head injury or other forms of neurologically related disability often give Rorschach protocols in which strange features are present but are not definitively indicative of the presence of a neurologically related problem.

The fact that the Rorschach does not seem to have any direct applications concerning the diagnosis of organic, neurologically related difficulties does not necessarily mean that it has no use with subjects in that category. In fact, Zillmer's 1994 report that approximately 25% of neuropsychologists use the Rorschach as a part of their routine evaluation signifies the likelihood that they find it applicable, not for diagnostic purposes, but in the context of generating information concerning personality structure and functioning.

In this context, a collaborative repeated measures study was designed during the early 1980s involving Rorschach Workshops and the University of Alabama at Birmingham (UAB) Neuropsychology Service. The purpose of the study was to evaluate personality structure and related functioning in homogeneous groups of subjects recently diagnosed as having neurologically related impairment and to determine if liabilities noted in the first test remained constant over a reasonably long period or dissipated as the result of recovery, rehabilitation, or both.

Method

The design included the administration of the Rorschach, along with various cognitive tests, to all subjects admitted as inpatients or outpatients to the Neurology Service at the UAB Medical Center during an undefined period of time and a subsequent readministration of the same tests approximately 8 to 12 months after the first testing had been completed.

All testing was administered at the UAB Neuropsychology Service by one of three technicians, and 20% of all Rorschach protocols were randomly selected and were rescored by one of the other two technicians or by one of the technicians at Rorschach Workshops and percentages of scoring agreement calculated. Unfortunately, as is often the case with well intended longitudinal studies, the retest rate for subjects was very low, and after a 3-year period of collecting the initial evaluations the study was abandoned.

During the 3-year period in which the initial testing was completed, more than 175 subjects were evaluated, usually within 3 to 7 weeks after admission as an inpatient or outpatient. Of the more than 175 subjects studied, 72 had suffered some sort of mild to moderate CHI and, whereas the number of subjects from other neurological diagnostic categories is too few to study thoroughly, the CHI group seems to provide sufficient data from which some useful information about the psychological organization of mild to moderately impaired CHI patients can be derived. Thus, this paper presents some descriptive statistics for Rorschach data concerning a fairly homogenous, neurologically impaired population.

Subject Description

The records included in this study were collected between 1981 and 1984, prior to the time in which it was discovered that protocols of less than 14 answers are probably not temporally consistent and, therefore, not interpretively valid (Exner, 1988). In light of that finding, 12 protocols have been discarded from the sample presented here. Thus, the data discussed in this paper are drawn from 60 participants, all of whom experienced a CHI and were tested within 3 to 5 weeks of having been admitted to the medical service unit at the UAB and diagnosed as having a mild or moderate CHI.

The group consists of 36 men and 24 women, ranging in age from 24 to 59 years with an average age of 38.13 years, a median age of 33 years, and a modal age of 25 years. These subjects range in educational background from 7 to 18 years, with a mean of 13.4 years, a median of 13 years, and a mode of 12 years. Information concerning marital status indicates that 22 are single, 24 are married, and 14 are divorced. All of these participants have an Impairment Index of between .5 and .75 on the Halstead-Reitan Neuropsychological Test Battery, indicating a moderate level of cognitive impairment. Of the 60 subjects, 51 have no known psychiatric history, 3 have been treated by psychotherapy for depression or anxiety, and 6 have been in some form of marital therapy. Forty-three of the subjects are known to have lost consciousness following the head trauma for periods ranging from a "few minutes" to approximately 72 hours.

Results

No effort has been made to create statistical comparisons between the data for these subjects and any other group. As stated earlier, the purpose of this paper is to present some descriptive data for various Rorschach variables that may provide a "broad brush" description of this group and to discuss some of the implications of these findings when considering intervention and rehabilitation planning for moderately impaired CHI patients.

Calculations of percent of agreement between technicians collecting the Rorschach and those rescoring protocols range from 88% for special scores and and active-passive scoring, to 100% concerning *W* responses and 97% for *D* and *S* location scoring. The median percentage of agreement for determinant scoring is 93%.

The *R* Variable

The mean number of responses given by the group is 19.07 (SD = 6.44). The range of responses was from 14 to 35 with a median of 16 and a modal value of 14. Although the mean value does not seem to be much lower than found among

nonpatients (M = 22.67), both the median and modal values are quite important as adult nonpatients have median and mode values of 23.

This finding is commensurate with almost all previous reports concerning neurologically impaired patients. In general, this group gives fewer answers than is typical for nonpatient adults. This suggests that these patients are more reluctant to participate actively in the decision-making task, the problem-solving task, or both, presented by the Rorschach. This is not a surprising finding in that CHI patients being tested only 3 to 6 weeks after the insult has occurred have probably not recovered very much of whatever cognitive functioning may have been impaired and, therefore, tend to have difficulty in addressing complex or ambiguous tasks.

Diagnostic Indices

None of the 60 subjects have positive values for the Schizophrenia Index (*SCZI*), a finding commensurate with the data for the adult nonpatient standardization sample. Similarly, only 4 of the 60 CHI subjects (i.e., 7%) have values on the Depression Index (*DEPI*) greater than 4 and none have DEPI values greater than 5. This is only a slightly higher proportion than found among nonpatient adults (i.e., 4%). Collectively, these findings suggest that none of the CHI patients have features of markedly serious psychopathology.

Response Style Findings

There are several variables in the Rorschach yield that afford some indication of the presence of fairly static stylistic features in the personality. Rorschach (1942) was the first to identify some of these features in his explication of the introversive and extratensive styles and in his comments about participants who had neither the introversive nor extratensive style, which he called ambitent. Subsequent research has indicated that the value for Lambda, the relationship between active and passive movement, the presence of reflection responses, and positive values for the Hypervigilance or Obsessive style indices also provide information concerning the presence of a stylistic orientation.

Table 1 provides frequency and percentage data for the 60 CHI subjects for each of eight variables related to response styles. Table 1 also displays the frequency and percentage information for the same eight variables for the 700 adult nonpatients that constitute the normative sample for the Comprehensive System (Exner, 1993). The figures

Table 1
*Rorschach Response Style Data for 60 CHI Patients Contrasted With Findings for Nonpatient Adults**

	CHI (N = 60)		Nonpatient (N = 700)	
Variable	Frequency	%	Frequency	%
L >.99	**44**	**73**	**38**	**5**
Introversive	20	33	251	36
Extratensive	**4**	**7**	**306**	**44**
Ambitent	**36**	**60**	**143**	**20**
$Fr+rF$ > 0	**16**	**27**	**47**	**7**
p > a+1	4	7	6	1
HVI positive	4	7	13	2
OBS positive	0	0	14	2

*Data shown in bold appear to represent substantial differences between the two groups.

shown in bold call attention to seemingly marked differences between the groups and, thus, may be interpretively important.

For examination of Table 1, it will be noted that there are four variables for which the CHI group differs substantially from the nonpatient normative sample. The first, and probably most important, of these is the Lambda (*L*) variable, for which 44 of the 60 CHI subjects have values of 1.0 or greater. In fact, the mean value for the group is 3.27 (*SD* = 5.46), with a median value of 1.71, and a mode of 3.67. This is in sharp contrast to the nonpatient normative sample in which the mean for *L* is 0.54 (*SD* = 0.26) with median and modal values of 0.50.

A second very important finding in Table 1 concerns the very low percentage of extratensive response styles found in the CHI group. Only four subjects (i.e., 7%) have this characteristic as contrasted with 44% of the nonpatient sample. Similarly, there is a large discrepancy concerning the proportion of ambitent subjects in the CHI group when compared with the nonpatient group. Of the CHI subjects, 36 (i.e., 60%) are ambitents as contrasted with only 1 in 5 of the nonpatient participants. It might be speculated that the high ambitent frequency is directly related to the frequency of high *L* values but, at best, that is only partially true. The mean Experience Actual (EA) score for all 60 subjects is 3.87 (*SD* = 2.49), and for the 44 high *L* subjects it is only 3.09. However, 19 of the 36 ambitents have *EA* values greater than 5.5 even though 13 of the 19 also have *L* values greater than 1.0. An important question posed by these findings is whether this select group of 60 CHI subjects manifest these same features prior to trauma. When compared with the nonpatient data, logic suggests that this is not true and that the head trauma has caused marked changes to occur in basic coping style orientation.

The greater proportion of CHI subjects who have reflection answers is more difficult to address. One postulate is that the data do represent a preexisting condition, but it seems equally plausible to suggest that the recent trauma may have caused much more concern with the "self" than may have existed prior to the trauma.

Control and Stress Tolerance Findings

Rorschach findings concerning *D* scores and Adjusted *D* scores often provide valuable information about one's capacity to maintain control under stressful situations. People with Adjusted *D* scores greater than 0 are typically regarded as having a more sturdy tolerance for stress. Most people have *D* scores or Adjusted *D* scores with values of 0. Those having *D* scores, Adjusted *D* scores, or both, with values less than 0 are typically considered in a state of stimulus overload in which their capacities to tolerate stress have been reduced substantially, and there is a corresponding increase in the likelihood of impulsiveness, behavioral decisions, or both, that are not necessarily well thought through. Table 2 includes frequency data concerning the six *D* and Adjusted *D* scores for the CHI and nonpatient groups plus some descriptive statistics for the Experience Actual (*EA*), Experienced Stimulation (*es*), and Adjusted Experienced Stimulation (*Adj es*) variables.

It is interesting to note that data concerning the *D* scores and the Adjusted *D* scores show nearly the same proportions of subjects from the CHI and nonpatient groups. The only seemingly discrepant data concerns the proportion of subjects with Adjusted *D* scores of less than 0; however, those findings may be a bit misleading because of the small N involved in the CHI group. In other words, there is no reason to believe that the level of stress tolerance is lower or the proclivity for impulsiveness is greater in the CHI group than in the nonpatient adult sample.

On the other hand, the data concerning the *EA*, *es*, and *Adj es* present a much different picture regarding stress and control capability. The CHI mean value for *EA* is less than half that for nonpatients and the mean value for *Adj es* is well below the nonpatient mean. These findings suggest that the *D* and Adjusted *D* score data should be interpreted very cautiously and, in fact, imply that CHI subjects are much less capable of handling stress or maintaining control over decisions and behaviors than the *D* score data indicate.

It is important to note, however, that the mean value for *EA* may be somewhat misleading because of a bimodal distribution. Eight of the 60 subjects

Table 2
*Data Concerning Four Rorschach Scores Related to Stress Tolerance and Capacity for Control for CHI Patients Contrasted with Nonpatient Adults**

	CHI (N = 60)			Nonpatient (N = 700)		
Variable	Frequency		%	Frequency		%
$D < 0$	12		20	156		22
$D = 0$	36		60	455		65
$D < 0$	12		20	89		13
Adj $D > 0$	12		20	206		29
Adj $D = 0$	36		60	428		61
Adj $D < 0$	12		20	66		9
	M	*SD*	Mode	*M*	*SD*	Mode
EA	**3.87****	**2.49**	**2.0**	**8.82**	**2.18**	**9.5**
es	**4.40**	**3.59**	**3.0**	**8.21**	**2.00**	**7.0**
Adj es	**4.14**	**3.10**	**3.0**	**7.02**	**2.11**	**7.0**

*Data shown in bold appear to represent substantial differences between the two groups. **This mean may be misleading because of a bimodal distribution.

gave no *M* responses, and 20 other subjects gave no chromatic color answers. The mean *EA* for this group of 28 subjects is 2.99 versus a mean *EA* of 6.11 for the remaining 32 subjects who gave at least one *M* response and at least one chromatic color answer. Although the latter value is still considerably lower than is typical for nonpatients, it does reflect considerably more available resource than does the mean for the total group.

Findings Concerning Cognitive Functioning

Table 3 presents some data concerning processing, mediation, and ideation reflected by the Rorschach yield.

The apparent differences between the groups for the location score *D*, and *Zf*, are probably a consequence of the lower number of responses given by the CHI group. Nonetheless, there does seem to be a noteworthy difference between the CHI and nonpatient samples for some aspects of processing activity. More than one fourth of the CHI sample (i.e., 27%) appear to be underincorporators, that is, they scan a stimulus field hastily and do not organize the features of the field very effectively. In contrast, the nonpatient sample includes only 5% with this characteristic. Similarly, whereas nearly 20% of the nonpatient subjects tend to overincorporate in their processing activity, that is, paying very careful attention to the details of a stimulus field and often rescanning the field more than once, only 7% (n = 4) of the CHI subjects show this characteristic.

Conversely, the data concerning mediation (i.e., perceptual conventionality and accuracy) are striking, mainly because there are no substantial differences noted for the average number of popular responses, the *X*+%, the *F*+% or the *X*-%. In other words, even though suffering from cognitive disarray, these CHI subjects manifest evidence of perceptual accuracy that is no different than the nonpatient sample.

The findings concerning ideation are equally intriguing. The Table 3 data indicate that CHI subjects do give fewer human movement responses than nonpatient adults, but as noted earlier, 8 CHI subjects gave no *M* whatsoever. Nevertheless, the CHI group appears to give no greater frequency of *M*-answers, and the occurrence of the six special scores, which are usually related to manifestations of cognitive slippage, thinking problems, or both, that is not well

Table 3
*Data Concerning Processing, Mediation, and Ideation for CHI Patients and Nonpatient Adults**

Variable	CHI (N = 60) Frequency	%		Nonpatient (N = 700) Frequency	%	
Zd > +3.0	**4**	**7**		**127**	**18**	
Zd < -3.0	**16**	**27**		**37**	**5**	
	M	*SD*	Median	*M*	*SD*	Median
W	7.53	3.41	7.00	8.55	1.54	9.00
D	8.53	5.62	8.00	12.89	3.54	13.00
Zf	9.73	3.52	10.00	11.81	2.59	12.00
Mediation						
Popular	5.13	1.32	5.00	6.89	1.38	8.00
X+%	0.71	0.11	0.71	0.79	0.08	0.80
F+%	0.69	0.17	0.70	0.71	0.17	1.00
X-%	0.05	0.09	0.00	0.07	0.05	0.04
Ideation						
M	2.40**	1.80	2.00	4.30	1.92	3.00
M-	0.20	0.40	0.00	0.03	0.18	0.00
Sum 6 Spec Sc	1.60	1.98	0.00	1.59	1.25	1.00

*Data shown in bold appear to represent substantial differences between the two groups. **8 CHI patients gave no *M* responses, the mean for the 52 patients who did give *M* answers is 3.32.

organized or marked by poor judgment, is surprisingly similar to that found among nonpatients. These findings suggest that there is little evidence to argue that moderately impaired CHI patients will have some marked thinking disturbance.

Findings Regarding Affect, Self- and Interpersonal Perception

Table 4 includes data concerning emotion, self-perception, and interpersonal perception.

The data regarding affect suggest that a large proportion of CHI subjects prefer to avoid dealing with emotion or emotional situations. As noted earlier, one third of the CHI subjects failed to give at least one chromatic color answer, but even the remaining 40 subjects have a lower weighted sum for color than do nonpatients, and possibly more importantly, the data regarding the *Afr* reveal that the mean value for the CHI subjects is considerably lower than for nonpatients. Values in this range suggest that a preference exists to avoid processing, responding, or both, to emotionally toned stimuli. In a similar vein, the CHI patients give markedly fewer shading answers than do nonpatients, again suggesting the presence of a tendency to avoid and/or constrict internally provoking emotion.

The data concerning self-perception is also rather remarkable because the means and modes for the Egocentricity Index, the presence of morbid content, and the total number of human contents given for the CHI and nonpatient groups do not appear to differ substantially. The interpersonal data, however, are quite different. There is a very remarkable difference for the number of records in which the Coping Deficit Index (CDI) is positive. More than half of the CHI patients have values greater than 3 for this variable as contrasted with only 3% of the nonpatient sample. It is important to note that the positive CDI frequency

Table 4
*Data Concerning Eight Variables Related to Affect, Self-Perception and Interpersonal Perception**

	CHI (N = 60)			Nonpatient (N = 700)		
	Affect					
Variable	*M*	*SD*	Mode	*M*	*SD*	Mode
WSum Color	1.47**	1.35	1.50	4.52	1.79	3.50
Sum Shading	1.40	1.32	1.00	3.39	2.15	3.00
Afr	0.43	0.12	0.27	0.69	0.16	0.91
	Interpersonal perception					
	Frequency	%		Frequency	%	
CDI > 3	**32**	**53**		**21**	**3**	
	Self-Perception					
	M	*SD*	Mode	*M*	*SD*	Mode
Human content	4.13	2.35	4.00	5.43	1.63	6.00
MOR	0.47	0.62	0.00	0.70	0.80	0.00
3r+(2)/R	0.39	0.20	0.44	0.39	0.07	0.33

*Data shown in bold appear to represent substantial differences between the two groups. **20 CHI patients gave no chromatic color answers, the mean for the 40 patients who did give chromatic color responses is 3.08.

for the CHI group may be spuriously elevated as these protocols were collected at a time when *COP* and *AG* special scores were not yet in use. Therefore, a CDI value of 1 would be assigned to all CHI subjects by the absence of *COP* and *AG* scores. Nonetheless, considerable social impoverishment must exist for the CDI value to reach 4, and 20% of the CHI subjects actually have a CDI value of 5.

Discussion

As a group, the CHI subjects seem to have at least five distinct psychological liabilities when contrasted with typical nonpatient adults; they (a) tend to be more impoverished in terms of available resources (i.e., *EA*), (b) function in a more simplistic way when attending to details of the world (i.e., high *L*), (c) tend to be inconsistent in their coping and decision-making activities (i.e., ambitent), (d) are unable or unwilling to deal directly and effectively with their feelings and emotional stimulation around them (i.e., low frequency of color and grey-black responses and low *Afr*), and (e) are lacking in common social skills that promote and maintain smooth and meaningful interpersonal relationships.

These findings are not necessarily surprising. Each of the CHI subjects has experienced significant trauma and are suffering from both the neurological disarray and the natural fear and anxiety that occurs when once easily accomplished operations become difficult or even impossible. Although it may be likely that partial or full recovery of impaired operations will gradually occur, no believable guarantees of this could be provided to any of the CHI subjects and at the time of testing. Thus, the resulting pictures probably illustrate a mixture of pretrauma features, neurologically related impairments, and psychological reactions to the impairments currently being experienced.

On a more positive note, there is no evidence to suggest the presence of any marked thinking disturbance. Similarly, there is no evidence to suggest that CHI patients distort perceptual inputs more

than most adults or that they are unaware of conventionality. The self-images of CHI patients are not markedly distorted or damaged, and there is no evidence to suggest that they have experienced a significant loss of self-esteem.

Obviously, not all CHI patients have all of the negative or positive features noted earlier. These represent "group" findings but, as such, may have value when considering the challenges confronting those involved with intervention and rehabilitation efforts with patients having experienced a mild or moderate CHI. In that context, it is probably most important to discuss the negative findings and their importance for intervention and rehabilitation without concern for whether these may have been preexisting conditions or posttrauma manifestations that may dissipate with time.

The findings concerning Lambda and the low *EA* may be most important. The high Lambda style noted so frequently in the CHI group may be some sort of natural homeostatic response that occurs when a disabling occurs in cognitive operations. On the other hand, it may simply represent limitations created by cognitive disabilities. In either event, it produces an avoidance of complexity, ambiguity, or both, that reduces overall effectiveness in coping and decision-making and can easily lead to behavioral blundering because stimulus cues that may be important to the formation of a decision or behavior are disregarded. It seems important to note that, whereas a high Lambda style seems undesirable, it does bring immediate relief from the stresses of complexity and ambiguity. As such, it is probably a very practical tactic for those experiencing the sorts of impairments common among mild or moderate CHI patients. When considering intervention with high Lambda subjects, it is vitally important to keep the intervention routines very structured and uncomplicated.

A high Lambda style can also relate to a lower *EA*, that is, fewer than expected or hoped for resources. Head trauma certainly may alter neural functioning in a manner that reduces capacity for careful decision-making or implementing decisions in a controlled manner. Conversely, a lower capacity for decision-making and behavioral control can lead to situations in which head trauma may be more likely. In either event, the limited resources noted among many CHI patients calls for a developmental form of intervention through which available resources gradually will be enhanced.

The high Lambda style noted in 3 out of 4 CHI subjects probably is also related to the finding that 3 out of 5 fail to exhibit either introversive or extratensive coping orientations. They are ambitents and, as such, tend to be quite inconsistent and less efficient in their approach to decision-making and likely to repeat problem-solving errors. Obviously, the composite of the high Lambda approach to narrow what is attended to, a limitation of resource, and a tendency to vacillate or be inconsistent in decision-making is a mixture from which some sort of future disaster seems inevitable. Optimally, these are transient features that will dissipate as neurological recovery from the trauma occurs but, unfortunately, the absence of pretrauma data makes it impossible to predict this with any certainty. In either event, intervention and rehabilitation efforts involving ambitent patients should be oriented toward instilling a consistency in decision-making habits.

It is also important to emphasize that most of the CHI patients are people who seem to want to avoid feelings, both in terms of processing emotionally toned stimuli in the environment and experiencing negative emotion within themselves. In effect, there is a sort of emotional shutdown that appears to occur. Again, this is not a surprising consequence of serious neurological trauma but, obviously, it becomes an important target for consideration when planning rehabilitation or intervention, and caution should be exercised to avoid emotional overloads for these sorts of patients.

One of the consequences of the previously mentioned liabilities among the CHI group is the high frequency of social coping deficiency. On a positive note, there is no evidence to suggest a lack of interest in others. Nonetheless, the compositive data do suggest that these are individuals who are unsure of appropriate interpersonal behaviors or

are unlikely to implement such behaviors even though they might be aware of what is and is not appropriate. Again, this is not surprising in light of the disarray that has been experienced. However, these findings highlight the importance of attending to such findings when they are positive for CHI patients. Clearly, they become a priority target early in the intervention or rehabilitation format as they relate indirectly to emotions and emotional exchanges with others.

Finally, it seems important to reemphasize that the composite of features noted in this target group are not necessarily representative of all CHI patients, but do tend to identify many of the common assets and liabilities found among those who have recently experienced mild or moderate head trauma. To be sure, pretrauma data would be of considerable value in differentiating those features that have resulted from the insult, and a sophisticated longitudinal evaluation would offer much information regarding the ease or difficulty by which liabilities can be expected to change. In the absence of such data, the descriptive information provided here may serve to highlight some of the functional problems commonly found in CHI patients and offer some guidance for intervention or rehabilitation planning.

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