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## Depression, Alexithymia, and Pain Prone Disorder: A Rorschach Study

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The relationship between depression and chronic low back pain (LBP) is controversial. Theorists differ in the emphasis they place on predisposing versus reactive factors in LBP disability and depression. Alexithymia has been suggested as a predisposing factor in psychosomatic disorders, including chronic LBP. This study addresses the association between depression, alexithymia, and LBP using the Rorschach comprehensive system. LBP patients were hypothesized to be distinguishable from Research Diagnostic Criteria-diagnosed inpatient depressives, to exhibit features of alexithymia, and to resemble a group of *DSM-III* personality disorders. Subjects were 33 chronic LBP patients. Results supported the hypotheses. On depression measures, LBP patients differed significantly from depressives ( $p < .001$ ). LBP patients exhibited Rorschach features consistent with alexithymia. They also exhibited a number of similarities to the personality disorders group. The role of alexithymia as a cognitive-mediating factor in coping and adaptation is discussed.

The conceptualization, assessment, and treatment of chronic benign pain syndromes (e.g., low back pain) are receiving broad and increasing attention in the clinical literature. There is currently no consensus in the field regarding etiology, dynamics, or treatment. Controversy surrounds the extent to which premorbid versus reactive factors are thought to contribute to disability and the observed association between chronic low back pain and depression.

The current study investigated chronic pain, alexithymia, and depression from the perspective of psychological assessment. This approach is not novel (e.g., Garron & Leavitt, 1983; Gentry, Shows, & Thomas, 1974; Leavitt & Garron, 1979; Maruta, Swanson, & Swenson, 1976; Sternbach, Wolfe, Murphy, & Akeson, 1973a, 1973b; Strassberg, Reimherr, Ward, Russell, & Cole, 1981). Of particular interest here, however, is the utility of the Rorschach Inkblot Test, specifically, the empirically derived scoring and interpretive comprehensive system for the Rorschach developed by Exner (1974, 1978, 1985a, 1985b; Exner & Weiner, 1982).

The assessment and treatment of chronic low back pain (LBP) have enjoyed considerable success within the purview of behavioral medicine (e.g., Fordyce, 1976; Hickling, Sison, & Holtz, 1986; Keefe, 1982). Most pain-related studies using psychological assessment tools have relied on objective, rather than projective, techniques, most notably the Minnesota Multiphasic Personality Inventory (MMPI). Behaviorally oriented clinicians have tended to reject projective techniques, especially the Rorschach, have disputed their claims to reliability and validity, and have predicted their ultimate demise (Piotrowski & Keller, 1984). The comprehensive system for the Rorschach, developed over the past 20 years and derived from an extensive foundation of normative, validity, and reliability studies, has done much to revitalize the Rorschach's psychometric respectability (Ritzler & Alter, 1986). Application of the Rorschach comprehensive system to the vexing problem of chronic pain may shed new light on the debate over the causes and correlates of pain and their uncertain association with depression.

### PAIN PRONE DISORDER AND ALEXITHYMIA

Blumer and Heibronn (1982), in an in-depth clinical study of pain patients, advanced the claim that "pain prone disorder" is a variant of depressive disease, that is, "chronic pain is a psychobiological disorder of the depressive type" (p. 391). This claim has engendered considerable commentary. Yet, by their choice of the term "pain prone," the authors emphasize a set of predisposing character traits, a point largely overlooked in the subsequent controversy surrounding their pain-depression hypothesis.

Pain patients have typically been described as having working class origins, limited formal education, familial pain models, and a history of hard physical labor and responsibility commencing at an early age. Pain patients have been hypothesized, as a consequence, to have strong unmet dependence needs, wherein a minor injury provides a "rational and socially acceptable means of depending on others for emotional and economic support" (Gentry et al., 1974, p. 176). Chronic pain patients often emphatically deny psychological difficulties and, in common with other psychosomatic disorders, are described as "alexithymic" (Blumer & Heilbronn, 1981, 1982).

As early as 1948, Ruesch noted disturbances in verbal and symbolic expression in psychosomatic patients. Coined by Sifneos (1973), alexithymia (literally, "no words for feelings") denotes a striking impoverishment of fantasy and capacity for symbolic thought and the inability to experience and verbalize emotion. French theorists chose the term *pensée opératoire* ("operational thought"; Marty & deM'Uzan, 1963) to describe the concrete, restricted, and stereotypic cognitive style of psychosomatic patients (Apfel & Sifneos, 1979; Nemiah, 1977; Nemiah, Freyberger, & Sifneos, 1976; Nemiah & Sifneos, 1970). McDougall

(1974) maintained that the individual destined to exhibit the features of a psychosomatic disorder fails to develop the ability to experience and express feelings or to achieve the capacity for cognitive imagery (i.e., fantasy) as a means of effective coping and adaptation. A recent theoretical proposal (Martin & Pihl, 1985) implicates alexithymic deficits in affective awareness and symbolic cognitive activity as vulnerability factors in coping with stress. In this context, chronic pain, as a psychosomatic illness, may represent a final common pathway by which personality conflicts and deficits, in association with the specific life stressors, find expression.

Alexithymia has been noted in addictive disorders (Krystal & Raskin, 1970), in violent offenders (Keltikangas-Jarvinen, 1982), and in psychosomatic disorders (Krystal, 1979; Mendelson, 1982). The accumulated evidence suggests that alexithymia is a trait or dispositional factor ("primary alexithymia") rather than a state-related phenomenon. State or "secondary alexithymia" has been observed in posttraumatic stress disorders, including Vietnam vet syndrome (Shipko, Alvarez, & Noviello, 1983), life-threatening illness (Krystal, 1979), concentration camp experience (Freyberger, 1977), and it has been seen as a complicating factor in the recovery from illness (Greenberg & Dattore, 1983). Given this evidence, trait alexithymia appears to be a constituent of personality structure in certain types of characterological disturbance.

Alexithymic characteristics in psychosomatic patients have been demonstrated using projective techniques, notably the Thematic Apperception Test (Defourney, Hubin, & Luminet, 1976-1977; Taylor & Doody, 1982; Taylor, Doody, & Newman, 1981). Using a projective drawing technique, the SAT-9, investigators found inhibited capacities for symbolic thought and integration in chronic pain patients (Catchlove, Cohen, Bruha, & Demers-Desrosiers, 1985; Cohen, Demers-Desrosiers, & Catchlove, 1983; Demers-Desrosiers, Cohen, Catchlove, & Ramsay, 1983). A Rorschach study comparing organic versus functional low back pain patients found evidence of inhibited affective expression (low *Sum C*) and cognitive restriction (high *F%*) in the functional LBP group (Leavitt & Garron, 1982). In a Rorschach study of mixed psychosomatic and "neurotic" patients, psychosomatic patients exhibited marked restriction in both imaginal capacity and ability to express emotional content (Vogt, Burckstrummer, Ernst, Meyer, & Von Rad, 1977). Similar Rorschach findings of inhibited fantasy in hypertensive patients have been reported (Safar, Kamienska, Levenson, Dimitru, & Pauleau, 1978). In a study of inflammatory bowel disease and "psychoneurosis," significant differences in emotional verbalization and modulation were found, but not in Rorschach fantasy formation (Taylor et al., 1981). A major shortcoming of previous Rorschach studies of alexithymia was the nonsystematic classification of Rorschach alexithymia indices and the absence of an empirical base and normative reference data upon which to draw inferences.

The Rorschach is uniquely suited as a measure of alexithymia insofar as the construct entails impaired capacity for fantasy and affective response, and con-

crete, stereotypic perception and cognition. Clinically, alexithymic patients would be expected to exhibit the Rorschach characteristics displayed in Table 1.

### PAIN PRONE DISORDER AND DEPRESSION

A primary, and controversial, assertion by Blumer and Heilbronn (1982) has been that chronic pain is a variant of depressive illness. This assertion, that pain represents a "muted" or "masked" depression, is at variance with other work that views the depression that accompanies chronic pain as reactive (Sternbach, 1974; Turk & Salovey, 1984). A number of recent studies have examined the relationship between chronic LBP and depression with only equivocal results. These studies have used Research Diagnostic Criteria or RDC (Kramlinger, Swanson, & Maruta, 1983), the Schedule for Affective Disorders and Schizophrenia (Krishnan et al., 1985), and the National Institute of Mental Health Diagnostic Interview Schedule (Katon, Egan, & Miller, 1985) as well as biological markers of depression (France & Krishnan, 1985). Although a clear association between pain and depression has been observed clinically (ranging from 10% to 80% incidence in LBP patients depending on the sample and diagnostic criteria), semantic confusion about depressive etiology (e.g., endogenous vs. reactive), diagnosis, and the atypical depressive symptomatology and treatment response of chronic LBP patients have muddled definitive empirical conclusions.

### RORSCHACH INDICES OF DEPRESSION

Until the advent of the comprehensive system for Rorschach scoring, interpretation, and research, evidence of depression on the test was founded largely on clinical observation and theoretically directed analyses of content. The comprehensive system attempts to place the previously clinical-intuitive evidence of depression into an empirical-normative framework. The evolving Rorschach De-

TABLE 1  
Hypothesized Rorschach Alexithymia Indices

<i>Function</i>	<i>Rorschach Index</i>
Fantasy	1. Low response productivity ( <i>R</i> )
	2. Low human movement percepts ( <i>M</i> )
Affect	3. Restricted affective response (Low weighted <i>Sum C</i> )
	4. Poorly integrated affect (Low <i>FC</i> )
Cognition-Perception	5. Concrete cognition (Low blends)
	6. Perceptual stereotypy (High $\lambda$ )
Adaptive Resources	7. Deficient ideational and affective assets (Low <i>EA</i> )

pression Index (DEPI) has shown a moderate "hit rate" (40% to 70%; Exner, 1984) in correctly classifying patients with both RDC and *DSM-III* (American Psychiatric Association, 1980) diagnoses of depression. The specific components of the Depression Index are: (a) Sum Vista Shading > 0, (b) Color-Shading Blends > 0, (c) Egocentricity Index < .30, (d) Sum Achromatic Color > 2, and (e) Sum Morbid Content > 3.

From a content point of view, the Depression Index illustrates the classic phenomenological features of depression, including dysphoric introspection (a); blocked, painful affect (b and d); low self-valuation in relation to others (c); and an emphasis on the dark, gloomy, or morbid dimensions of experience (a, b, d, e). A cutting score of 4 or 5 on the DEPI strongly suggests either chronic affective disturbance or deep episodes of recurrent depression (Exner, 1984, p. 7).

## HYPOTHESES

This study investigated the assertion that chronic LBP patients are clinically dissimilar to inpatients with major depression and exhibit Rorschach characteristics of characterological disturbance. Examining the Rorschach protocols of chronic LBP patients in relation to reference data from RDC-diagnosed inpatient depressives, a mixed group of *DSM-III* diagnosed personality disorders, and nonpatients, the following hypotheses were advanced:

1. LBP patients would be distinguishable from patients with major affective disorders on the Rorschach Depression Index.
2. LBP patients would exhibit Rorschach characteristics consistent with the clinically derived alexithymia profile proposed here (Table 1).
3. As preliminary support for the notion that LBP patients present a variant of characterological disturbance, chronic LBP patients should share Rorschach characteristics with a reference group of *DSM-III* diagnosed personality disorders.

A unique feature of this study was the a priori proposal of a Rorschach alexithymia profile and the use of the empirically based comprehensive system in administration, scoring, and comparison of clinical reference groups.

## METHOD

### Subjects

Subjects for this study ( $N = 33$ ) were drawn from a pool of 136 patients requesting treatment services over a 6-month period in a multidisciplinary pain

control and rehabilitation program associated with a large urban medical center. These LBP subjects had typically consulted with a number of physicians without success and were referred by their general practitioners, internists, or surgeons after conventional treatment had reached an impasse. Upon intake, subjects received a complete evaluation, including medical and physical therapy examination, a psychosocial history, a clinical interview, and a battery of psychological tests including the Beck Depression Inventory (BDI), Wechsler Adult Intelligence Scale-Revised (WAIS-R), a short form of the Minnesota Multiphasic Personality Inventory (MMPI-168; Overall & Gomez-Mont, 1974; Overall, Higgins, & DeSchweintz, 1976), and the Rorschach. Data for this group were composed exclusively from subjects with complaints of chronic low back pain for which there was, after thorough medical examination, either minimal or no demonstrable organic pathology. Data from subjects with demonstrable organic pathology, malignant pain syndromes (cancer), head and/or neck pain, or psychotic disorders (e.g., somatic delusions) were excluded. To insure the reliability of Rorschach data, subjects with records of less than 13 responses (*R*) were eliminated (J. E. Exner, personal communication, September 20, 1985), reducing the sample size to 33, with 22 females (67%) and 11 males (33%). The LBP group was composed of 27 white (82%) and 6 black subjects (18%). Informed consent was obtained from the subjects.

Table 2 presents demographic, BDI, and WAIS-R data for the LBP group. Analysis of variance data revealed no significant sex differences on BDI and WAIS-R scores. Length of pain complaints ranged from 7 months to 8 years. Number of pain-related surgical interventions ranged from zero to four. Approximately 50% of the group admitted to varying degrees of substance abuse, including alcohol and physician-prescribed analgesics or sedative-hypnotics. Approximately half of the group was receiving compensation or was planning litigation in an effort to obtain compensation. Over half of the group had pain onset associated with minor injuries (usually falls) at work or home. Mean BDI scores for the LBP group indicate that, on the average, patients scored at the up-

TABLE 2  
Demographic, Beck Depression Inventory (BDI), and WAIS-R Data for  
Chronic LBP Patients (*n* = 33)

<i>Variable</i>	<i>M</i>	<i>SD</i>	<i>Median</i>	<i>Mode</i>	<i>Range</i>
Age	41.60	10.58	40.00	42	26-61
Education	12.57	2.46	12.50	12	8-17
BDI	14.60	7.07	14.00	8	1-29
WAIS-R					
Verbal IQ	91.40	14.70	88.00	75.00	63-121
Performance IQ	91.10	14.30	92.50	104.00	55-112
Full Scale IQ	90.50	14.50	93.50	81.00	63-114

per end of the "mildly depressed" range (Center for Cognitive Therapy, 1978). Figure 1 presents the mean MMPI-168 profile for the LBP group. This MMPI profile (the 1-3 high point pain or so-called "conversion V") is consistent with previously reported MMPI studies of chronic LBP patients (Gentry et al., 1974; Sternbach et al., 1973a; Strassberg et al., 1981) and attests to the representative nature of the present sample. No significant sex differences were observed across MMPI scales except for Scale 5 (Mf),  $F(1, 32) = 15.98, p < .01$ .

Rorschach reference data for the depressive inpatient and mixed personality disorder groups were randomly selected from the protocol pool at the Rorschach Research Foundation. Depressives ( $N = 210$ ) were inpatients diagnosed by RDC (Spitzer, Endicott & Robbins, 1978). The records were collected at 22 facilities in 13 states, with 88 from federal, state, county, or city hospitals, and 132 from private hospitals. All were first admissions. The group was composed of 99 females (47%) and 111 males (53%); 172 were white (82%) and 38 were black or Hispanic (18%). Distributions for sex were different between the depressive and LBP groups, females being overrepresented in the LBP group,  $\chi^2(1, N = 243) = 4.35, p = .05$ . No difference in the distributions for race was found. Mean age for the de-

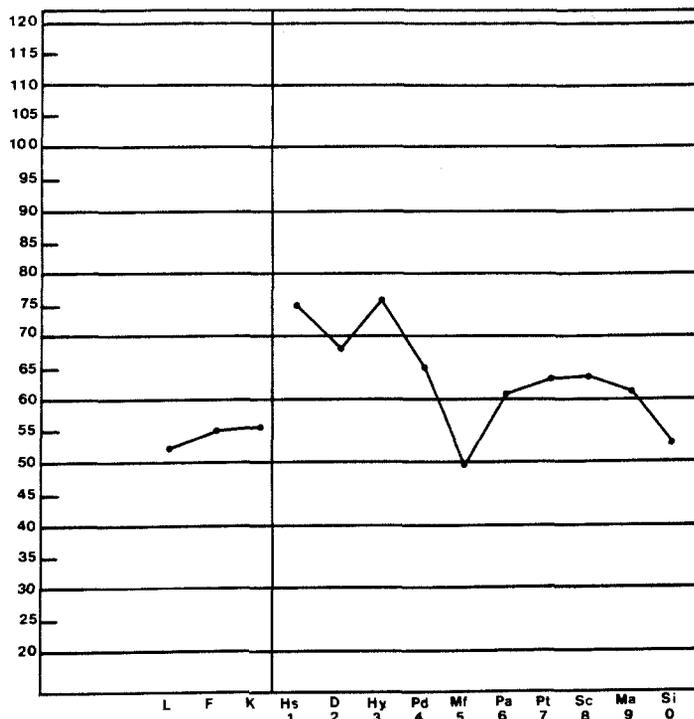


FIG. 1 Mean MMPI-168 profile for 33 LBP patients. (Note. T scores converted according to Overall, Higgins, & DeSchweintz, 1976.)

pressive group was 37.13 years ( $SD = 14.05$ ), with a range of 19 to 61 years. Mean level of education was 11.92 years ( $SD = 4.83$ ), with a range of 9 to 21 years. Depressives were significantly younger than the LBP group,  $t(241) = 2.15, p < .05$ . No difference between the groups was found for years of education.

The mixed personality disorder group was composed of 200 subjects, 121 males (61%) and 79 females (39%), with diagnoses from five *DSM-III* personality disorder categories (including antisocial, schizoid, avoidant, dependent, and passive-aggressive). Most of the records (164) were collected at 29 outpatient units in 10 states, and the remaining 36 were contributed by private practitioners. Mean age was 23.61 years ( $SD = 5.14$ ), with a range of 18 to 47 years; 139 were white (70%) and 61 were black or Hispanic (30%). Mean educational level for the personality disorder group was 11.84 years ( $SD = 4.96$ ), with a range of 9 to 17 years. There were 124 subjects with histories of alcohol or drug abuse, and 113 had been involved at least once in legal disputes. In comparison to the LBP group, males were significantly overrepresented in the mixed personality disorder group,  $\chi^2(1, N = 233) = 8.52, p = .01$ . No difference was found for the distributions of race between the two groups. The group of mixed personality disorders was significantly younger than the LBP group,  $t(231) = 9.47, p < .001$ . No difference between the groups was found for years of education.

Nonpatient reference data were included for comparison purposes. This sample of 600 was randomly selected from a larger group of 1,225 nonpatient records, stratified so that 120 subjects were chosen from each of five U.S. geographical areas. The group was composed of 336 females and 264 males. The mean age was 29.18 years ( $SD = 8.08$ ), with a range of 18 to 34 years; 498 were white and 102 were black or Hispanic. Mean educational level was 13.15 ( $SD = 2.21$ ), with a range of 8 to 19 years. Nonpatients were significantly younger than LBP patients,  $t(631) = 6.64, p < .001$ . No differences between the groups were found for sex, racial distribution, or level of education.

Because sex and age differences were found between the LBP and depressive and personality disorder groups, LBP Rorschach data were examined to rule out possible confounds. Analysis of variance and correlational data (partialled for  $R$ , response productivity) revealed no relationships between sex, age, and Rorschach variables.

## Procedure

Following clinical disposition, Rorschach records were rescored blind as to identity and sex of subject, utilizing strict criteria from the *Rorschach Workbook for the Comprehensive System* (Exner, 1985b), by a PhD clinical psychologist (M.W.A.) and an advanced clinical psychology graduate student (E.B.). Both raters were trained in the comprehensive system. Percentage of agreement between raters for Rorschach determinants on a randomly selected group of protocols ( $n = 15$ ) was 94%.

## RESULTS AND DISCUSSION

The findings of this Rorschach study provide support for the hypotheses that LBP patients are clinically dissimilar to inpatients with major depression, that LBP patients exhibit Rorschach features of alexithymia, and that LBP patients are clinically similar to patients with *DSM-III* diagnosed personality disorders in several significant ways.

Table 3 presents descriptive statistics and significance tests for Rorschach depression variables for LBP, inpatient depressive, personality disorder, and nonpatient groups. Examination of Table 3 reveals a number of highly significant differences, as predicted, between the LBP and inpatient depressive groups on Rorschach depression measures in support of Hypothesis 1. Table 4 presents descriptive statistics and significance tests for Rorschach alexithymia variables across the four comparison groups. Table 5 presents Rorschach frequency, proportion, and directionality data for the four groups. Table 6 presents significant chi-square tests between the LBP and depressive groups. The highly significant difference between the two groups on the Depression Index ( $p < .001$ ) further supports the hypothesis that LBP patients and inpatient depressives are distinguishable on the Rorschach (Hypothesis 1). Additionally, significant differences emerged between the two groups on style of affect management ( $FC:CF+C$  ratio), mode of perceptual scanning ( $Zd$  score), and degree of cognitive constriction ( $\lambda$ ).

Whereas only 2 (6.1%) of the LBP group scored 4 on the Depression Index and none scored 5, 106 (50%) of the inpatient depressives scored 4 or 5. These differences are significant at the  $p < .001$  level. Furthermore, examination of the indi-

TABLE 3  
Descriptive Statistics for Rorschach Depression Variables for LBP Patients,  
RDC Inpatient Depressives, *DSM-III* Personality Disorders, and Nonpatients

Variable	LBP (n = 33)		Depressives <sup>a</sup> (n = 210)		Personality Disorders (n = 200)		Nonpatients (n = 600)	
	M	SD	M	SD	M	SD	M	SD
Depression								
DEPI	1.06	1.14	3.57	1.23**	0.90	0.98	0.95	1.08
Sum Vista Shading	0.15	0.36	1.25	1.27**	0.25	0.59	0.48	0.93
Color-Shading Blends	0.42	0.78	0.90	1.12*	0.41	0.81	0.51	0.69
Egocentricity Index	0.31	0.14	0.32	0.16	0.42	0.17	0.39	0.11
Sum Achromatic Color	0.88	1.27	2.99	1.71**	0.78	1.12	1.31	1.28
Sum Morbid Content	0.82	1.38	3.47	2.09**	0.99	1.26	0.70	0.94

<sup>a</sup>Comparison of LBP and depressive groups,  $df = 241$ , one-tailed tests.

\* $p < .01$ . \*\* $p < .001$ .

TABLE 4  
Descriptive Statistics for Rorschach Alexithymia Variables for LBP Patients, RDC Inpatient  
Depressives, DSM-III Personality Disorders, and Nonpatients

Variable	LBP (n = 33)		Depressives (n = 210)		Personality Disorders (n = 200)		Nonpatients (n = 600)	
	M	SD	M	SD	M	SD	M	SD
Fantasy								
R	17.12	4.83	19.50	7.95 <sup>a*</sup>	17.95	5.41 <sup>b</sup>	22.57	5.54 <sup>c***</sup>
M	1.85	1.39	3.34	2.42 <sup>**</sup>	2.33	1.91	4.19	2.04 <sup>***</sup>
Affect								
FC	0.98	0.71	1.49	1.78 <sup>**</sup>	0.97	1.33 <sup>*</sup>	3.87	2.06 <sup>***</sup>
Weighted Sum C	1.76	1.45	3.10	2.31 <sup>***</sup>	2.60	1.70 <sup>**</sup>	4.23	1.86 <sup>***</sup>
Cognition-Perception								
Lambda	2.43	2.65	0.81	1.13 <sup>***</sup>	1.52	1.43 <sup>**</sup>	0.59	0.28 <sup>***</sup>
Blends	1.76	1.52	4.28	3.18 <sup>***</sup>	2.54	2.39 <sup>*</sup>	5.02	2.21 <sup>***</sup>
Resources								
EA (Sum M + Sum C)	3.61	1.92	6.44	3.92 <sup>***</sup>	4.44	2.85	8.28	2.56 <sup>***</sup>

<sup>a</sup>Comparison of LBP and depressives,  $df = 241$ , one-tailed tests. <sup>b</sup>Comparison of LBP and personality disorders,  $df = 231$ , one-tailed tests. <sup>c</sup>Comparison of LBP and nonpatients,  $df = 631$ , one-tailed tests.

\* $p < .05$ . \*\* $p < .005$ . \*\*\* $p < .001$ .

vidual elements of the DEPI (Table 3) indicates, with the exception of the Egocentricity Index, that depressives achieve higher scores than LBP patients, confirming support for Hypothesis 1. In contrast, 100% of the personality disorder group scored negatively on the DEPI ( $< 4$ ), compared to 94% of the LBP group. In regard to depressive symptomatology, then, the evidence suggests that chronic LBP patients are distinguishable from depressives and are more similar to patients with personality disorders.

It should be noted that almost half of the LBP group (45.5%) had  $FM + m < Sum\ Shading$ , compared to 58.1% of the inpatient depressives. This indicates feelings of distress and dysphoria associated with chronic LBP, but not sufficient to constitute a full affective syndrome.

It is also notable that modulated affect management and overincorporative perceptual styles are conspicuously absent from the LBP group in comparison to the depressives (Table 6). Additionally, chronic LBP patients exhibit significantly greater perceptual stereotypy (lambda) than inpatient depressives,  $p < .001$ .

Hypothesis 2 asserted that LBP patients would exhibit Rorschach characteristics consistent with the logically derived clinical description of alexithymia proposed in Table 1. Examination of Table 4 reveals in support of Hypothesis 2 that chronic LBP patients scored in the predicted direction on all of the proposed alexithymia indices. Of the four groups, LBP patients exhibit the comparatively

TABLE 5  
Rorschach Frequency and Directionality Data for LBP Patients, RDC Inpatient  
Depressives, DSM-III Personality Disorders, and Nonpatients

Variable	Pain Patients (n = 33)		Depressives (n = 210)		Personality Disorders (n = 200)		Nonpatients (n = 600)	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Depression index								
DEPI = 5	0	0.0	26	12.4	0	0.0	0	0.0
DEPI = 4	2	6.1	78	37.2	0	0.0	14	2.3
DEPI = 4 (Negative)	31	93.9	106	50.4	200	100.0	586	97.7
EB Style								
Introversive ( $M - WSumC > 2$ )	7	21.2	62	29.5	49	24.5	241	40.1
Ambitent	21	63.6	110	52.5	112	56.0	143	23.8
Extratsensive ( $WSumC - M > 2$ )	5	15.2	38	18.1	39	19.5	216	36.0
FC: CF + C Ratio								
Modulated ( $FC - CF - + C > 2$ )	0	0.0	38	18.1	21	10.5	289	48.1
No Direction ( $FC = CFC + 1$ )	24	72.7	100	47.6	127	63.5	267	44.5
Unmodulated ( $CF + C - FC > 2$ )	9	27.3	72	34.3	52	26.0	44	7.3
Zd Score								
Overincorporator ( $Zd + 3.0$ )	0	0.0	62	29.5	38	19.0	107	18.0
Optimal ( $-3.0$ to $+3.0$ )	19	57.6	110	52.4	124	62.0	451	75.0
Underincorporator ( $Zd < -3.0$ )	14	42.4	38	18.1	38	19.0	42	7.0
Form Quality Distortions								
X + % < .70	19	57.6	116	55.2	93	46.5	60	10.0
F + % > .70	18	54.6	100	47.6	90	45.0	157	26.1
X - % > .15	15	45.5	96	45.7	86	43.0	20	3.3
Suicide Potential								
S-Constel > 8 signs	8	6.1	27	12.9	4	2.0	11	1.8
Negative finding	31	93.9	183	87.1	206	98.0	589	98.2
FM + m < Sum Shading	15	45.5	122	58.1	54	27.0	117	19.5
$3r + (2)/R < .30$	16	48.5	82	39.0	51	25.5	56	9.3
Lambda > 1.5	17	51.5	24	11.4	83	41.5	8	1.3

most impoverished capacities for fantasy (low  $M$ ), affective responsiveness (low weighted  $Sum C$ ), and adaptively integrated affect (low  $FC$ ). Chronic LBP patients exhibit the greatest degree of cognitive constriction (low blends) and perceptual stereotypy (high lambda) in relation to the other groups. These differences are especially remarkable, considering the fact that response productivity ( $R$ ) has been controlled by eliminating those LBP records with  $R < 13$ , in which a disproportionate number of card rejections occurred. In regard to alexithymic characteristics, LBP patients exhibit greater similarity to the DSM-III diagnosed personality disorder group than either depressives or nonpatients (Table 4), lending support to Hypothesis 3.

TABLE 6  
Significant Chi-Square Tests for LBP Patients and RDC Inpatient Depressives

Variable Value	Pain Patients (n = 33) Freq.	Depressives (n = 210) Freq.	df	$\chi^2$
Depression Index				
DEPI = 5	0	26	2	22.02**
DEPI = 4	2	78		
DEPI < 4	31	106		
Affect				
Modulated (FC - CF + C > 2)	0	38	2	9.93*
No Direction (FC = CF + C + 1)	24	100		
Unmodulated (CF + C - FC > 2)	9	72		
Zd Score				
Overincorporator (Zd > +3.0)	0	62	2	18.63**
Optimal (-3.0 to +3.0)	19	110		
Underincorporator (Zd < -3.0)	14	38		
Lambda				
L > 1.5	17	24	1	32.64**

\* $p < .01$ . \*\* $p < .001$ .

Deficits in fantasy-cognitive activity (low *M*) and affective responsiveness (low weighted *Sum C*) distinguish LBP patients from the depressive and nonpatient groups in terms of resources available for coping (low *EA*). Almost half of the LBP group show evidence of disturbance in self-valuation, low  $3r + (2)/R$  (Table 5). Notably, almost two out of three chronic LBP patients were ambitents, failing to exhibit a consistent coping style, *EB* style (Table 5). The potential role of ambition as a vulnerability factor in coping with stress is considered later in this article.

Hypothesis 3 postulated that LBP patients would exhibit features of characterological disturbance in common with a group of mixed personality disorders. In comparing the LBP and personality disorder groups on the Depression Index, management of affect, perceptual scanning style, and lambda variables, only one comparison (perceptual scanning style) was significantly different, *Zd* score:  $\chi^2(2, N = 243) = 14.10, p < .001$ . In the LBP group, the overincorporative perceptual style is absent, and the underincorporative style is overrepresented in comparison to the personality disorder group, differences significant at the .001 level.

In sum, these findings provide support for the hypotheses that LBP patients are distinguishable from depressives, that they exhibit alexithymic characteristics on the Rorschach, and finally, that LBP patients bear partial resemblance to patients with personality disorders. Further, post hoc comparisons of personality disorder and nonpatient data for the seven alexithymia variables indicate that

the two groups could be significantly discriminated (all comparisons:  $p < .001$ ,  $df = 798$ , one-tailed tests). This latter discrimination strengthens the speculation that, although alexithymia may be a constituent of and useful in understanding psychosomatic disorders, including chronic pain, alexithymia may also be a factor in other types of characterological disturbance.

Several caveats about this study are in order. The small sample size of chronic LBP subjects, the absence of matched comparisons, and the modest strength of the Rorschach Depression Index (50%) in accurately classifying RDC depressives are all salient here. The proposition that LBP patients are alexithymic in a predisposing sense (primary alexithymia) may be countered with the alternate hypothesis that LBP patients exhibit alexithymic features as a consequence of their disability and pain (secondary alexithymia). The strength of test-retest reliability coefficients for the proposed Rorschach alexithymia indices (assuming a .80 criterion for trait status; Exner, 1985a) is evidence to suggest that these represent trait rather than state dimensions (see Table 7). Finally, the issue of depression continues to remain obscured by semantic and diagnostic cloudiness in that RDC criteria for depression used here can be labeled under numerous subtypes (e.g., simple, recurrent, endogeneous, or situational).

In a more speculative vein, these Rorschach findings shed light on the potential role of alexithymia in the pathogenesis of chronic low back pain. A great deal of the research on psychosomatic illnesses has focused on the magnitude or cumulative effects of stress. Comparatively little research has studied the specific

TABLE 7  
Proposed Alexithymia Indices: Correlation Coefficients for Nonpatient Groups of  
50 Adults Retested After 12 Months and 100 Adults Retested After 36-39 Months

Function	Rorschach Variable	1-Year Retest $r$	3-Year Retest $r$
Fantasy			
Response Productivity	R	.86	.79
Human Movement Percepts	M	.84	.87
Affect			
Affective Response	Weighted Sum C	.82	.86
Affective Integration	FC	.86	.86
Cognitive-Perception			
Concrete Cognition	Blends	—	—
Perceptual Stereotypy	Lambda	.78	.82
Resources			
Adaptive Resources	Sum M + Sum C = EA	.83	.85

Note. From *The Rorschach: A Comprehensive System* (Vol. 2, p. 69) by J. E. Exner, 1982, New York: Wiley. Copyright 1982 by John Wiley & Sons. Reprinted by permission.

role of mediating cognitive and affective factors in psychosomatic illness. Lazarus and his colleagues have emphasized the role of "cognitive appraisal" as a crucial constituent of success or failure in coping (e.g., Lazarus & Launier, 1978). Cognitive appraisal "refers to the way a person construes his or her well-being, that is, as irrelevant, benign, harmful, threatening, or challenging," the latter three being forms of stress appraisal (Lazarus & DeLongis, 1983, p. 249). Appraisal of situations involves mental activity entailing judgment, discrimination, and choice of activity. Although preliminary in its conclusions, this Rorschach study of chronic LBP raises several interesting questions about the role of cognitive-affective variables in coping and adaptation.

Approaching cognitive appraisal from a Rorschach framework, we have observed, in the case of LBP patients, comparative deficits in both cognitive (low *Sum M*) and affective resources (low weighted *Sum C* and low *FC*). We also observed indications of stereotypy and cognitive constriction (high lambda and low blends). The human movement response (*M*) and the type of experience it represents have a direct relevance for the processes of cognitive appraisal. The human movement response is an indicator of cognitive operations representing a "deliberate inner experience which is also affectively adaptive" (Exner, 1974, p. 259). The *M* response connotes a psychological process in which a functional relationship exists between the fantasy life of the individual and his or her external orientation to reality and object relationships (Exner, 1974, p. 260). The *M* response indicates the capacities for reasoning, reflection, and judgment "that become the basis of decision-making concerning the selection of responses for a given constellation of stimuli" (Exner, 1985a, p. 329).

Rorschach color responses, on the other hand, represent the availability of emotional resources in coping and adaptation. Affects perform a crucial "signal function" (Rosenblatt & Thickstun, 1982) as sources of data in person-environment transactions, representing the "felt-phase" of the appraisal process. Lazarus (1982) wrote that "the appraisal process gives rise to a particular emotion with greater or lesser intensity depending on how the stimulus situation is evaluated with respect to the person's well-being" (p. 1023). Deficiencies in emotional responsivity may indicate impaired relatedness to both internal and external milieus.

In sum, affectively adaptive imagery occupies a central role in coping: in the discernment of conflict and evaluation of threat; in fantasy strategies of anticipation, rehearsal, and resolution; and in the implementation of those strategies.

The Rorschach Experience Actual (*EA*) represents the sum of both fantasy-cognitive (*Sum M*) and affective resources (*Sum C*) at the disposal of the individual. Lambda, as an index of pure form responses, is a measure of cognitive control and, when elevated ( $> 1.50$ ), indicates cognitive constriction and rigidity. A highly significant correlation ( $r = -.66, p < .001$ , partialled for *R*) empirically confirms the negative relationship between Lambda and *EA*.

Ambitence, the absence of a preferred, consistent style of information proces-

sing in the service of coping, may also play a role in or be a correlate of alexithymia. As mentioned earlier, nearly two thirds of the LBP patients exhibited ambivalence in their Rorschach records. In a study of the relationship between Rorschach coping styles and problem solving, ambivalents were found to perform more operations than either introversives or extratensives in reaching solutions, required significantly more time to achieve solutions, repeated more operations, and made significantly more errors (Exner, 1985a). As a form of psychological inconsistency or vacillation, ambivalence is an ineffectual coping style and may signal a particular vulnerability to stress. Furthermore, ambivalence is overrepresented in clinical groups (42% in schizophrenics, 53% in depressives, and 56% in character disorders, compared to 24% in nonpatients), further evidence of its association with adaptive failure. In the chronic LBP group studied here, a significant association was found between ambivalence and lambda,  $\chi^2(1, N = 33) = 7.03, p < .05$ , using a median split on lambda. This suggests the possibility of a link between ambivalence, lambda, and alexithymia in chronic LBP.

Although these findings do not answer important cause-effect questions, they do focus on the description and correlates of LBP, the cognitive style associated with LBP, and the similarities between LBP and other clinical entities. The data suggest several potentially fruitful avenues of further study. The findings reported here require replication with larger samples utilizing matched comparison groups. This initial research is nevertheless promising for the investigation of a Rorschach alexithymia index, which may be validated with clinical groups of psychosomatic, personality, and posttraumatic stress disorders. Until such an index is validated, there may be good reason to suspect alexithymia in Rorschachs with high lambdas, particularly when associated with ambivalence and low EA. Once validated, a Rorschach alexithymia index may prove highly useful in prospective studies of the role of alexithymia in the genesis of psychosomatic illness, in the "acting out" behavioral styles characteristic of certain personality disorders, and in the "psychic numbing" frequently observed in trauma victims. Study of the relationship between ambivalence, lambda, and alexithymia may deepen the understanding of the relations between coping styles and adaptive failures. Based on the findings reported here, an investigation is underway examining the hypothesis that chronic LBP patients may constitute an excellent criterion group for the study of alexithymia in relation to other psychosomatic disorders (Acklin & Alexander, 1987). Finally, this study illustrates the value of the Rorschach comprehensive system in an area of clinical endeavor whose ethos is predominantly and increasingly behavioral in conceptualization.

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