

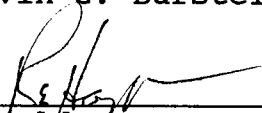
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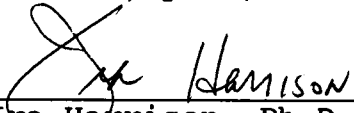
I am submitting herewith a dissertation written by R. Jeffrey Munson entitled "A cross-cultural study of selected Rorschach indices of Chinese and American normal and schizophrenic subjects." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Psychology.


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A CROSS-CULTURAL STUDY OF SELECTED RORSCHACH INDICES OF
CHINESE AND AMERICAN NORMAL AND SCHIZOPHRENIC SUBJECTS.

A Dissertation
Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

R. Jeffrey Munson
December, 1992

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DEDICATION

I want to dedicate this work to all those people who are trying to understand themselves and each other.

ACKNOWLEDGMENTS

First I want to acknowledge my parents, who always supported me even when they did not understand what I was doing. Their pride in my accomplishments here and in the rest of my life still carries me. Second, I want to thank Rita, without whom I would never have struggled to get to the University of Tennessee. Naturally, I want to thank Sandra Loucks, my mentor and good friend. She made demands on me, but contributed in equal measure. I also want to recognize Al Burstein, likewise my mentor and friend. If it were not for a chance phone call to him and his (I believe) good intuition, I am sure I would not even have been in the UT/K Clinical Psychology program to do this dissertation. I owe my serious familiarity with the Rorschach to Sandra and Al together. Li Shenggang deserves special recognition, since his original vision, generosity, and participation made this research possible. Thanks to Phil Green, whose congeniality and expertise greatly facilitated my technical work, and to Dr. Schmidhammer for finally clarifying some statistical problems. I want to thank Dave and Rebecca Moore, and their daughter Jessica, for adjusting to my intrusion into their life in the later stages of writing this merciless tome. Finally, I want to acknowledge the future, since if I did not believe in it there would have been no sense in starting this journey in the first place.

ABSTRACT

Rorschach protocols were obtained from four groups (Chinese Normal, Chinese Schizophrenic, American Normal, and American Schizophrenic subjects) and scored using the Burstein and Loucks system (1989). Ten variables were selected from the Burstein and Loucks system for comparing subject groups, including F%, F+%, B+%, Afr, CR, PT, VP, (VP), PSD, and LD. These variables reflect aspects of objectivity, subjectivity, and thought disorder. Each variable was analyzed with the ANOVA, comparing the groups made by contrasting Culture and Mental Status factors. Results showed that all four groups of subjects gave statistically similar levels of pure form responses, even though the American Schizophrenic subjects' mean F% appeared clinically lower than the other three groups. Schizophrenics, regardless of cultural origin, gave lower Affective Ratios compared to Normal subjects. American Schizophrenics scored significantly differently than American Normal subjects on 8 out of 10 variables investigated. American Schizophrenic subjects consistently contributed extremely high scores on the Perceptual-Cognitive variables, while American Normal, Chinese Normal, and Chinese Schizophrenic subjects generated relatively low mean scores. Chinese Schizophrenics did not appear to display thought disorder, as measured by these Burstein and Loucks variables. Also, Chinese Schizophrenics had significantly higher mean

scores than American Schizophrenics on the two reality testing variables. However, Chinese Schizophrenics had a significantly lower B+% than both normal groups. Overall, Chinese and American Schizophrenic subjects showed dramatic differences in their scoring patterns, with Chinese Schizophrenics appearing much less pathological. However, Chinese Schizophrenic subjects could be distinguished from both Chinese Normal subjects and American Normal subjects using Afr and B+% variables. This research confirms the usefulness of the Burstein and Loucks Rorschach scoring system for detecting schizophrenic cognition in Americans and Chinese. Results are discussed in terms of cultural influences on the subjects and problems in the method.

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CHAPTER I

INTRODUCTION

The Rorschach Inkblot Test (Rorschach, 1964) has frequently in the past been used as a tool for examining personality from a cross-cultural perspective (e.g., DeVos, 1989; Hallowell, 1960; Henry, 1960; Lindzey, 1961). Its usefulness derives in part from the ostensibly culture-free character of the test stimuli. This apparently allows anthropologically-oriented psychologists to assess individuals or groups from different cultures with less fear of representing them from a covertly biased perspective.

Schizophrenia is a mental disease that devastates many people around the world. However, there is uncertainty about the effect of culture on the genesis of, recognition of, and local response to schizophrenia. Clarifying these influences requires the comparison of people from different cultural groups, both "normal" people as well as those suffering from specific psychopathologies, using standardized assessment methods. The Rorschach is one tool for this purpose, for it has also been used to identify and describe schizophrenic patients (Exner, 1986a).

Since Rorschach first developed his test in 1921, a number of scoring systems have been developed to assess responses to the inkblots (see Exner, 1969, for major

examples). One of the most recent is the system developed by Burstein and Loucks (1989). It was designed to encompass and refine prior systems while establishing a theoretical (specifically psychoanalytic) foundation for understanding and interpreting the findings. The Burstein and Loucks system has been used to examine scoring patterns of normal American subjects (Burstein and Loucks, 1989) and American paranoid schizophrenics (Zitlin, 1988).

This dissertation examined selected Burstein and Loucks Rorschach indices from protocols generated by Chinese and American subjects. About half of the subjects from each cultural group were diagnosed as schizophrenic while the other half were normal. The research was designed to reveal whether there were significant differences in the Rorschach scores among the four groups made by contrasting cultural and diagnostic factors.

CHAPTER II

LITERATURE REVIEW

Cross-Cultural Psychology

Given that the personalities of all humans are determined by heredity and environment, people are different in the particular characteristics of the two factors that influence their development. The study of personality and culture seeks to understand how the former is influenced by the latter (Honigmann, 1954), since culture impacts on the environmental contributions to personality formation. Thus, researching the way in which schizophrenic characteristics manifest themselves in the different environments of China and the United States requires an anthropological perspective on the two cultures. Most dangerous for such research are the researchers' covert biases operating as unconscious assumptions about the "natural" or expected character of human events. Learning more about another culture also allows a new viewpoint on one's own culture, reducing the confounding effects of covert assumptions.

Cultural anthropology is the subset of anthropology that studies cultures as the contextual expressions of human existence. Culture has been defined as "the integrated system of learned behavior patterns characteristic of the members of

a society which are not the result of biological inheritance" (Kelsey and Pelto, 1967, p. 3; see also Holmes and Parris, 1981; and Honigmann, 1963). Culture is a complex of interrelated parts showing dynamic characteristics, even resulting in emergent properties unpredicted by its parts (Munson, 1984). This can be seen in the importance and characteristics of dominant groups, kinship systems, ritual systems, role hierarchies, etc. Yet different cultures emphasize some structures more than other cultures. As will be seen, this is significantly true of Chinese and Americans. The "behavior" of a culture's people refers to all the manifest expressions of personality, including thoughts, feelings, and unconscious processes. Honigmann clearly supported this wide definition when he referred to culture as including both overt and covert behavior (1954). This fact is one basis for allowing the use of the Rorschach in this research. Context is all important for understanding culture and its contents (Honigmann, 1963). Context helps reveal the function and meaning of unconsciously motivated behaviors through their relations to culture's hierarchical structures. Indeed, context is important for clarifying the differences between the cultures employed here. Finally, "learned" and "not the result of biological inheritance" emphasize that culture is a phenomenon maintained and modified by being handed down from generation to generation through modelling, teaching, and shared experiences. Cultural traits such as

artifacts, rituals, social structures, and taboos are not inherited genetically, but depend necessarily on participation in a society (Honigmann, 1963).

The purpose of culture is human adaptation and survival, the satisfaction of biological, psychological, and social needs (Holmes and Parris, 1981). Individuals are likely, if not necessarily compelled, to use cultural constructs to achieve or maintain personal and social homeostasis or growth.

A critical assumption in cross-cultural research is that language is "essential to the development and transmission of human culture" (Holmes and Parris, 1981, p. 180). Levi-Strauss maintained that language and culture had analogous structures (Holmes and Parris, 1981). More provocatively, B. L. Whorf claimed that language confined the way people perceived and comprehended their world, thus shaping human culture (Cole and Scribner, 1974).

All cultures include some structure called religion (Holmes and Parris, 1981). Honigmann (1963) applied the term narrowly to ritual, saying that ritual served to bind members of a culture into a common group, thus providing identity and solidarity. However, religions go beyond ritual. They also reflect primary cosmological beliefs formed of accumulated knowledge plus assumptions that bridge gaps in knowledge. All humans possess a world-view, and there are a wide variety of such views. Similarly, religion may be viewed as a main expression of a larger unconscious cognitive construct of

mythology. The American and Chinese mythologies vary significantly, as can also be seen in different kinds of free associations and creative material.

Basic Aspects of Chinese Culture

The above-mentioned aspects of human variation are seen in specific cultural differences between China and the USA. While China has a complicated diversity of subcultural groups within its borders, the Han is a superordinate group which constitutes 94% of the total population (Blunden and Elvin, 1983). The names "Han" and "Chinese" will be used synonymously in this dissertation, and the general description that follows pertains to their cultural context.

The three basic religions of China often seem to be fused in the Chinese mind (Blunden and Elvin, 1983), since the Han are said to be "Confucian in office, Taoist in retirement, and Buddhist as death approaches" (Livingston and Lowinger, 1983, p. 21). The values of these religions structure Chinese attitudes and behavior. Confucius refined and generated the rules of moral and pragmatic social life. He promoted virtues such as honesty, morality, modesty, ancestral respect, humaneness, endurance, moderation, intelligence and awareness (Waley, 1938). Taoism is sometimes viewed as the most mystical of these religio-philosophical systems. The Taoist "Superior Man" followed the flow of existence with unresisting

accommodation, accomplishing this through harmony with the cosmic unity, flexibility, obedience, perseverance, composure, and balance. Buddhists believed in transcendence or existential freedom from the illusion of the phenomenal world. They felt that humans kept themselves bound to the world through desire, so that freedom was possible through renunciation of desire for pleasure and wealth. All three are informed by the binary cosmology epitomized in the symbolism of Yin and Yang, which underpins the thinking of all Chinese (Shin-pyo, 1974).

Socially, the Chinese place historical importance on the family as a model for structuring interpersonal relations. While basically patrilineal, families also attend to maternal ties (Chao, 1983), since all geneological considerations are of some importance. This is true even while males are generally accorded higher value and more privileges than females (Koo, 1985). Females are considered lesser family members since they will eventually marry into another family. The structure of relations in the family defines the rights and obligations of individuals to each other. Ancestors, whose approval is sought, are revered in and approached through religious ritual. Chinese family seniors receive respect from their juniors by simple virtue of their position in the social hierarchy. The head of the family is responsible for its harmony, and any lack of family cohesion or efficiency caused by another member is the head's direct

responsibility. This experience of co-responsibility allows and reinforces the effect of Chinese shame, their society's strongest shaper of behavior (King and Bond, 1985). The rituals of "face" function to prevent confrontation and conserve vertical authority relationships (Ho, 1980). In the end, there are no Chinese acts with purely individual consequences. This contrasts dramatically with American culture, for which personal freedom and responsibility are the very foundations of individual and social essence.

It is consistent that a Chinese person's value is determined by his or her practical impact on the social system. That personal validation in China depends on the material or measurable contributions to society marks a profound difference between Chinese and Americans. This was forcefully presented in Potter's analysis of the cultural construction of emotion in rural Chinese social life (1988). This article identified how Chinese emotions were considered of no practical utility or intrinsic importance to the social institution. The seven basic feelings of joy, anger, sadness, fear, love, disliking, and liking were considered like innate drives that were not useful for harmonious social functioning. One important way that this is culturally promulgated is that Chinese parents do not label affects for their children. Instead, they cite the material consequences of behavior as reasons for acting one way or another. Some freedom to express feelings cathartically follows from this, since there

will be no social consequences for showing them. Love is the significant exception, since succumbing to the temptation to express it suggests a destabilization of interpersonal ties meant to be based on propriety. If love threatens the social order, than appropriate behavior is best maintained by due physical and emotional distance between parties. In any case, since emotional demonstrations are not ordinarily given significant attention, there is generally no social payoff artificially increasing the expression of feeling. Thus, people do not expect their demonstrations to gain them anything. Indeed, great emotion is expressed at times in China, but it is ignored unless it has practical consequences. For example, a woman who wept and grieved for years over lost family members was not felt to have a pathological condition until her crying began to affect her vision. Thus, the moderation of emotional expression typically associated with Orientals is not simply a reaction to emotions as such, but is also a reaction to demonstrable excesses of emotions. In general, though, Han are trained from childhood to control and withhold their emotions (Hsu, 1981; Wu and Tseng, 1985). Instead, the Chinese are said to attain their meaning from their practical and material value to the social context (whether family, clan, town, or country). This clarifies the importance of work and external contributions in this and other Eastern societies. This is also probably related to the high prevalence of somatic disorders in China (Tseng and Wu,

1985), where physical complaints are viewed as more justifiable. The related caretaking style has important consequences for socio-individual development seen from the object relations perspective, as well. For example, Dien (1983) argued that the Chinese self does not evolve through a process of gradual separation and individuation. Instead, a "little me" maintains its definition through relations with the "big me" (i.e., family, clan, state).

By contrast, American individuals achieved their identity and value through social communications in the affective sphere, a process important to developing intrapsychic representations. The importance of emotions in the USA means that they cannot be freely expressed, since there are many expectations for the presentation if not the experiencing of "appropriate" emotional responses. Feelings in America are so important that there is a special tendency to pay attention to inner experiences and psychological processes. They must be understood, differentially expressed, and used in the negotiation of social life.

Language and Culture

The importance of language differences between China and the USA must not be underestimated, for they have many psychological, social, and perhaps even physical effects. The relation between family structure and the Chinese language is

reflected in an elaborate formal terminology for tracing and defining kinship relations (Feng, 1948). Similarly, Chinese is rich with symbolic representations of "face" and related concepts (Ho, 1980). These go well beyond analogous American conventions. Comparing written or spoken English and Mandarin syntactically and semantically is extremely difficult, affecting the analysis of language protocols. Biyin (1985) reviewed findings that related reading and neurophysiological differences between Chinese and English language speakers. Milford (1985) not only argued that language differences acted as a significant psychological barrier between China and other cultures, but that the Chinese historically sanctioned this for protective purposes.

In terms of the more general structuring of culture and experience, Baltung and Nishimura (1983) described significant differences between Chinese and English: English was interpreted to endow time-space with simple rigid structures, while the greater and richer flexibility of the Chinese language allowed wider kinds of experience with space-time, knowledge, nature, people, and the transpersonal. On a practical level, this can be seen in the more general denotative character of some Chinese concepts. For example, an idiogram used to indicate mustaches is the same one used to identify a bird's headfeathers and the catfish's barbels. The idea that language has the fundamental capacity to structure experience received some additional support from research on

Occidental-Oriental differences: Tanaka-Matsumi and Marsella (1976) showed how Japanese and Americans differed dramatically in their experience of depression, as reflected in their language. Americans appeared to be more abstract and internalizing ("I feel lonely"), while Japanese seemed to externalize and use more concrete symbolism ("I feel like rain"). Sapir may have been correct when he said: "The worlds in which different societies live are distinct worlds, not merely the same world with different labels attached" (1929, p. 209).

China and Psychology

Many of the aforementioned practical and social characteristics of the Chinese culture are reflected in the history and practice of psychology and psychiatry in their country. Initially influenced by Soviet Pavlovianism and pragmatic materialism, they rejected Freud's idealism and dynamic psychology in favor of a psychobiological approach (Livingston and Lowinger, 1983). Currently, psychology and psychiatry appear dominated by applied, social, and cultural concerns (Ching, 1984; Tung, 1984). A patient will automatically (if not always consciously) be understood in a social context, rather than in terms of unconscious and ego. One Chinese psychiatrist said sexual conflict did not exist for his people because of the proletarian education they received (Livingston

and Lowinger, 1983). Psychiatric problems are understood as social failures, so treatment usually involves family, colleagues, and neighbors. Its focus is therapy and reeducation aimed at reintegration into the society. Patients are consciously confronted with the nature of mental disorders. Groups are aimed at constructive criticism of self and others. Therapy is generally rational-directive and socialist; for the patient may be assigned to study, say, Mao's essay on "Where Do Correct Ideas Come From?" The patient is advised to think about the present and future rather than the past (Dien, 1983). Use of psychiatric medication is not uncommon, but physical therapies also still include traditional techniques such as acupuncture and moxibustion (Livingston and Lowinger, 1983). Even the "organ theory" of emotions, which maintains that organ disorders account for emotional disorders, reveals the practical and materially oriented thrust of etiological theory. It also relates to the high prevalence of somatization disorders in the East (Tseng and Wu, 1985).

Such general discussion of the Han "modal" personality needs to be modulated by several facts. First, the subjects used in this experiment were from an urban area of China, so that they were more likely to have had exposure to other ways of thinking about society, customs, and personal value. Also, political changes in China have altered significant aspects of social life there. Formal and Western religions were rejected

under Mao, and they seem to have had difficulty achieving relevance since his death (Siu, 1989). Important among the changes is the governmental prohibition against having more than one child born to a couple (Wei, 1983). This conflicts with tradition, and has the effect of reducing the extension of the familial network of relations. The larger family seems to have been replaced by the local workforce (and, by extension, the government), so that needs for social order and allegiance are generally satisfied via the state structure.

Schizophrenia across Cultures

The questions of how schizophrenia varies among different cultures is not easily answered. The cultural relativity of madness was argued in the 1930's by Ruth Benedict (1934). Her thesis was that the meanings attached to particular behaviors depended on the cultural context, so that what was considered normal in one culture would be abnormal in another. Also, differences among cultures were said to depend on accidental or arbitrary factors such as geography or social themes selected for elaboration. This would suggest that madness is culturally defined and has no cross-cultural validity.

By contrast, Jane Murphy (1978) examined local descriptions of deviant behavior and found clear commonalities among different cultures, as well as conformity to Western descriptions of symptoms. For example, Eskimo symptoms of

insanity included loss of control of culturally sanctioned behavior, disorientation, paranoid delusions, bizarre behavior, and violent acts. Insanity for the Yoruba of Nigeria included behaviors interpretable as hallucinatory, affectively inappropriate, labile, dangerous, and violent. Moreover, as is done in Western psychiatric practice, these cultures defined highly deviant and disordered individuals in terms of symptom collections or syndromes. While Murphy recognized differences among cultures, she was more impressed by the cross-cultural commonalities in descriptions of serious mental illness. The differences she found had to do with the conceptual content of disordered symptoms. By contrast, the similarities were clearly in the forms of the symptoms.

Concern for cross-cultural psychology was fueled when Cooper and his colleagues (1969, 1972) showed significant differences in the diagnoses of schizophrenia between American and British psychiatrists. This was partly explained by different responses to schizoaffective patients: the British tended to diagnose affective illness, while Americans leaned toward schizophrenia (Gurland, Fleiss, Cooper, Kendell, and Simon, 1969). It seemed that different cultural groups sometimes applied different criteria to decisions as to the presence and severity of symptoms. The difficulties were complicated when one culture viewed a symptom as pathological while another did not. At the same time, Americans are probably more similar to the British than the Chinese in their

cultural and professional views of psychopathology. Thus, the problems in comparing schizophrenics diagnosed by Americans and Chinese may be even more formidable than comparing schizophrenics of two Western cultures.

The critical studies bearing on the cross-cultural status of schizophrenia were the International Pilot Study of Schizophrenia (1973) and Schizophrenia: An International Follow-up Study (1979), conducted by the World Health Organization. Using standardized assessment methods they assessed psychotic patients in nine centers around the world "to establish whether certain specific mental illnesses [especially schizophrenia] were present in several culturally contrasting parts of the world..." (World Health Organization, 1973, p. 3). Since two of the research centers were in Taipei and Washington, reflecting schizophrenia in Chinese and American cultures, the findings are even more focally relevant to the study presented here.

The WHO pilot study found that "there is a high degree of similarity among the Centres with regard to the symptoms that occur most frequently in their schizophrenic patients" (1973, p. 183). Different cultures tended to recognize an aberrant condition called schizophrenia characterized by common perceptual, cognitive, affective, and behavioral abnormalities. The most common of these abnormalities included, from most frequent to least frequent: lack of insight, inadequate description, suspiciousness, unwillingness to cooperate, ideas

of reference, flatness of affect, delusions of persecution, delusions of reference, delusional mood, poor rapport, auditory hallucinations, thought alienation, and gloomy thoughts.

Also, despite the similarities among the schizophrenics of different cultures, some of the differences between the symptoms of schizophrenics in Washington DC and Taipei are notable. The Chinese alone among centers gave both the highest rank order of frequency and the highest percentage of positive ratings to lack of insight. Americans, by contrast, gave lack of insight a rank order of frequency and a percentage of positive rating significant lower than all the other centers. Also, the Chinese schizophrenics had the highest percentage of positive ratings given to poor rapport. This was more than 20% higher than the Americans.

Paranoid schizophrenia was the subgroup most commonly diagnosed across centers (including Taipei), with the highest incidence being in Washington DC. Moreover, the American sample had the most different symptom profile of the nine centers compared. In fact, they did not reach concordance level in the analysis with the other centers, conforming with only 4 of the other 8 groups. Looking at the percentage scores given the 27 symptom units for these subgroups showed some differences for Chinese and Americans. There were more American paranoid schizophrenics that were identified with qualitative thought disorder, circumstantial cooperation, and derealization than there were Chinese paranoid schizophrenics.

By contrast, more Chinese showed symptoms of neurasthenia, poor insight, auditory hallucinations, and flatness of affect than did Americans. Also, no Chinese paranoids showed any percentage of disregard for social norms, while Washington DC patients gave 11%.

It is of interest that the WHO also recognized the difference between the form and content of symptoms, and that content may be defined as abnormal within an individual cultural context. Put another way, WHO recognized that cultural beliefs can mimic psychotic symptoms. For example, a belief that one is being paranormally influenced by witches would be delusional in one culture, but not in another whose socio-religious belief structure included such possibilities. A separate study found that cultural transmission factors accounted for about 30% of the etiological variance in schizophrenia (Bebbington and McGuffin, 1988).

In conclusion, it should be clear that further investigation of these comparisons between Chinese and Americans is warranted. Language alone, having some formative effects on thought and experience, is a significant differential influence in the two cultures. The social matrices in China and America contrast dramatically, impacting on the role of emotion in personal validation, on the formation of object relations and other aspects of character formation, and on everyday social relationships. Very different personality traits and social goals are idealized in the two countries.

The very mythological underpinnings of religion, thought, and ideation are in sharp contrast. Thus, the entire context of Chinese culture is different from that of America. However, what requires further investigation is how these differences may variably impact on the genesis and expression of schizophrenia, and how this will be expressed in Rorschach protocols.

Rorschach Performance across Cultures

Behavioral expectations in and knowledge about one's culture are acquired via social standardization, beginning in the family and continuing in the society at large. Social standardization gives meaning and purpose to behavior, as well as bounding behavior within generally accepted limits. Moreover, this process interactively "penetrates even into covert traits of behavior, into a person's dreams, anxieties, and unconscious fantasies" (Honigmann, 1963, p. 3). Such covert experiences are often unavailable to direct observation, but can be explored with the Rorschach. The subject's Rorschach task is to bring order to the ambiguous stimuli, and he or she draws on memories, fantasies, and emotions to accomplish this. To the extent that cultural standardization has inculcated the personality with cognitive structures, interpersonal expectations, mythologies, symbolic images, values, etc., these can be reflected in the responses

given to the inkblots. Similarly, the Rorschach can reflect religious influences in the general sense of an existential "world-view" or relationship to the environment. Overall these facts suggest that the Rorschach is an appropriate instrument when studies are interested in unconscious personal and social dimensions of personality.

Hermann Rorschach himself indicated in his monograph (1921/1964) that the test would be appropriate for studying differences among people of different cultures. He also opined that the greater the differences among the racial groups, the greater the differences in their respective test protocols. He was then the first to use his instrument in a cross-cultural study (Opler, 1967), where he compared protocols of Swiss subjects from different regions. He gave evidence that the Bernese were more introversive while the Appeneller were more extratensive, and he stated that this difference would hold up for schizophrenics of the respective regions.

More generally, the Rorschach Test has been used in cross-cultural research in the last 45 or more years since the interest in the intersection of culture and personality began (see, for example, Abel and Hsu, 1949; Billig, Gillin, and Davidson, 1947-48; and Hallowell, 1945). The Rorschach enjoys the reputation of being applicable to a wide variety of cultures because of the relatively culture-free nature of the test materials. Most psychology tests are heavily culture-

dependent (Honigmann, 1954), using items or stimuli that require experience with a particular culture for the delivery of an adequate response. By contrast, the Rorschach uses neither verbal stimuli nor representational pictures, but rather ambiguous inkblots. In this regard it is relatively culture-free.

However, Opler (1967) warned us to not simply assume that the Rorschach is culture-independent, saying that these methods were useful "provided cultural variables are understood" (p. 100). Harrison (1991) also questioned whether the Rorschach was indeed culture-free. For example, he pointed out that prior experience with the particular colors employed in the Rorschach will vary among cultures. This idea receives some indirect support from East (1956), who pointed out that some African languages lack words to describe colors. Also, Courtney (1986) found that Chinese and Americans made different stereotyped associations to the colors such as green and red. Perhaps more importantly, Americans have a history of exposure to the Rorschach and the psychological ideas or myths that surround the test, while many other cultures do not. Also, some of the scores derived from a subject's Rorschach performance are evaluated by reference to norm groups. However, norm group performance may be subject to cultural influences, so that subjects may need to be compared to norm groups from their own culture. This is not currently done. Despite these issues (and they require further research

to clarify their effects), the Rorschach remains relatively culture-free compared to other tests.

Few attempts have been made to establish the cross-cultural validity of the Rorschach by comparing different peoples' specific perceptual processes. One example was a study by Derogatis, Gorham, and Moseley (1968), concerned with different cultural responses to both structural and interpretive ambiguity in the Holtzman inkblots. The former was measured as the facility with which subjects could "articulate stable percepts ... set off by ... form, color, and shading" (p.67). Interpretive ambiguity was measured as the mean number of total words given per subject-group per blot, with high ambiguity implied by high word-total means. They compared Mexican, German, Taiwanese, and American college students' responses to these measures. They found that the different groups showed high agreement in their perceptions of structural ambiguity and moderate agreement in their perception of meaning ambiguity in the blots. This suggests that, to the extent studied and with these cultural groups, the Holtzman blots are relatively free of cross-cultural influences on structural and interpretive ambiguity. If these results can be generalized, then the original Rorschach blots would be similarly free of such cross-cultural influences.

Other cultural differences need to be controlled in Rorschach testing so as to avoid confusing psychological and cultural processes. For example, Amir, Kohen-Raz, and

Rabinowitz (1966) tested Israeli army officer candidates of Eastern and Western upbringings with the Group Behn-Rorschach. Initially, they found highly significant differences between Easterners and Westerners on a number of indices. However, when they divided the subjects into high and low education groups, many of the findings disappeared. These results were important because Westerners tended to be more highly educated, and these two factors could have been confused.

Cultural differences in interpersonal processes also need to be controlled. For example, research by Moon and Cundick (1983) suggested that Korean men were generally more constricted and inhibited than their Western counterparts. However, Howes and DeBlassie (1989) pointed out that the Korean men were all questioned on their fantasies by a woman, which invoked a particular restricted social reaction. Weinberg (1968) made a similar error in his failure to recognize the behavioral impact of the investigator in his assessment of Ghanaian children.

In earlier research the Rorschach was generally used to investigate the "modal personality" (Honigmann, 1954) of different cultures. This was thought to be a description of the abstract typical personality which had the most common attributes associated with people of that culture. An explicit application of this idea is contained in Wallace's (1952) work with the Tuscarora Indians. This orientation

generally fell into disuse as the complexities of the issues involved became better recognized.

Abel (1948) reviewed a number of studies using the Rorschach to test people of different cultures. Some of the studies simply assayed members of a single group, while others compared members of different groups. Among the former, Henry and Henry (cited in Abel, 1948) tested Pilaga Indian children of Argentina. Researchers found a tendency to see details to the exclusion of whole responses in the context of a need to monitor the details of their environment so as to succeed at hunting, fishing, and food-gathering. Also, figural in their dynamics was an endemic parental rejection of older children following the birth of younger siblings, open sexuality throughout the developmental lifespan, and culturally inculcated fears around not sharing.

Cook (1942) tested Samoan boys between the ages of 16 and 27 to compare their modal personality to the European norm. Samoans emphasized the wholes to the exclusion of details. The author maintained that the notable use of white space responses was normal in the Samoan context because the color white had a strong positive valence for many cultural reasons. Also, the high use of color justifications among Samoans was explained using linguistic factors, since color differentiation was based on ubiquitous concrete experiences of nature. As an illustration, the word for "blue" translates equally as "sky-colored" and "deep-sea-colored." Preoccupations with

anatomy and blood responses were related to important yet ordinary and accepted aspects of their experience, including open sexual behavior and the slaughtering of animals.

Rorschachs given to 150 Sioux children were interpreted to mean that they stifled their impulses (Abel, 1948), apparently because their parents were rigid and unpredictable, and because basic resources (e.g., food) were scarce. Honigmann (ibid) gave the test to 28 Kaska Indians of northern British Columbia who lived by trapping and trading. He felt that their preference for social isolation was confirmed by test results pointing to introversion and emotional aloofness.

Among the researches that compared separate classes of people, some that Abel cited involved groups from the same basic culture, but which differed in their degree of acculturation to Western influences. Hallowell compared two groups of American Salteaux Indians of the Ojibwa group, one which lived in greater contact with white people than the other. He concluded that the less acculturated Indians showed greater introversion, lack of emotional development, and constrained rapport. Another study examined 185 Rorschachs from Hopi Indians, aged 5 to 18, from two communities differing in their degree of exposure to Anglo influences. Overall the trend was for Hopi children to give responses implying extreme emotional and behavioral self-control. Their scores suggested much diffuse anxiety, but this was sanctioned by the religious system and normal in their context. The less acculturated

Hopi children gave responses implying less spontaneity, stronger defenses, and greater seclusiveness. A similar experiment was done with Navajo children. It found that adolescent inclinations to withdraw began earlier in children more used to white people. By contrast, children from more isolated communities gave Rorschachs that showed greater sensitivity and had a greater range of emotional potentialities and nuance.

Nel (cited in Abel, 1948) compared white and black schoolchildren in the Republic of South Africa. The results suggested developmental differences that favored the white children. In addition, the black schoolchildren showed more emotional reactivity through higher use of color and anatomy responses. Tulchin and Levy (ibid) compared children from Spain and England. The English children gave more Whole, Movement, and Popular responses, while the Spanish gave more Color-Form and original responses. Oberholzer (ibid) compared Rorschachs for the Atimelang villagers of the East Indian island of Alor with those of Swiss males. The Alorese gave more color (including achromatic color) and small detail responses, but fewer whole and human movement responses than the Swiss. Oberholzer concluded that the Alorese performed like Europeans with brain injuries, but that they were "normal" in their own context. Bleuler and Bleuler (cited in DeVos and Bryce, 1989) looked at Moroccans, one group Arab and the other Berber. In general, the Moroccans were excessively

detail-oriented, after the manner of European schizophrenics. Percepts were woven into elaborate "semi-artistic, semi-fantastic wholes" (p. 80).

Moon and Cundick (1983) performed an interesting experiment comparing Rorschach indices from monolingual and Korean-English bilingual Koreans and Americans. They found that monolingual Americans gave fewer card rejections but higher rates of R, W, M, H, and X+% than monolingual Koreans. The F+% was directionally consistent with X+%. However, only the higher W rate held up when bilinguals were compared. Instead, the American bilinguals gave a higher incidence of FC and SumC, and a lower Lambda level. The higher Korean Lambda might be anticipated because of the Oriental emphasis on formal qualities to the exclusion of affective determinants. By contrast, the Americans with mixed linguistic experience appeared to have developed a higher emotional reactivity than any of the other groups. While the Orientals may be expected to show less affectivity because of cultural prescriptions favoring emotional self-control, the finding here occurs surprisingly in the context of a greater Oriental influence. However, closer inspection reveals a dramatic inequality between the bilingual groups. The Koreans were a mixture of university students, while the Americans were all missionaries. It is unclear how this group's bias toward a potentially narrow personality or experience type influenced the results. Nevertheless, this study highlights how language

and cultural experience can differentially influence Rorschach results. Similarly, Cook (1942) noted problems resulting from the use of translators during administration of the test. This included a high F% artifactually caused by limits on the ability to inquire. The possible interpersonal confounds from using a female interviewer in Moon and Cundick's experiment have already been mentioned.

Holtzman (1988) reviewed some of the 25 years of cross-cultural applications of his technique. Compared to North Americans, Mexicans gave slower response times (up to the age of 17), more use of small details, less pathological verbalization, less anxiety, less hostility in fantasy, less use of movement, and lower integration of parts into wholes.

Brar (1970) examined the content of Rorschach responses from different East Indian psychiatric patients. The author found that they gave a high frequency of incomplete human responses, content with threatening, bizarre, and supernatural themes, and perseverative content. These responses contained scorable CONFAB's, CONTAM's, and other contradictions of reality. In addition, the author repeated the frequently found poor form level of schizophrenics.

Schizophrenia

Concepts and Characteristics

Schizophrenia, "the most venerable" of the psychopathological syndromes (Kety, 1985, p. 3), is a heterogeneous mental disorder described by a collection of symptoms. Its delineation began with Emil Kraepelin, who combined Kahlbaum's 'katatonia', Hecker's hebephrenia, and Morel's description of 'démence précoce' (Bland & Kolada, 1988). He saw common features in catatonic, hebephrenic, and paranoid disorders, and combined them into 'dementia praecox' (Kraepelin, 1913/1971). He based his description of dementia praecox on phenomenology, course, and prognosis, rather than etiology or neuropathology. He described chronic personality deterioration, poor judgment, weakened mental activity and creativity, loosened intellectual integrity, bizarre and tangential thinking, impoverished and/or inappropriate emotions, and its usual appearance in young people (Bland and Kolada, 1988). He also noted an inability to develop emotional relationships with others, withdrawal from reality, dementia, stereotypy, mannerisms, hallucinations, delusions and various sorts of tics (Kety, 1985). Kraepelin felt that the fundamental disorder was caused by a loss of will leading to a disintegrated psychic whole.

Eugene Bleuler (1911/1950) hailed and augmented Kraepelin's work, but replaced Kraepelin's term with 'schizophrenia'. He also differed on which symptoms were central to schizophrenia, their etiology, and the illness's course. Bleuler introduced the 'four A's' of schizophrenic pathology: autism, ambivalence, associative looseness, and affective blunting. Kraepelin did not emphasize formal thought disorder as critical while Bleuler did. Bleuler said that schizophrenics suffered a loss of direction of drives, affects, and intellectual functioning, rather than the loss of the will or drives as such. He also denied the necessity of a chronic course to the illness. Also unlike Kraepelin, Bleuler felt that the disorder did not always appear in adolescence (Bland & Kolada, 1988). Finally, Bleuler broadened the concept by viewing schizophrenia as a group of disorders. He also shifted the diagnostic focus from phenomenology and course to (like Freud) interpretation of symptomatology. Bleuler's name for the disorder became the standard, but controversy over the causes, symptoms, and course of schizophrenia continued.

Kurt Schneider (1959) narrowed the disorder and operationalized its diagnosis by using "first" and "second rank symptoms." This deviated from both Kraepelin's and Bleuler's viewpoints, since Schneider emphasized the importance of hallucinations and delusions while rejecting the primary significance of ambivalence, depersonalization, stereotypy,

and disturbances in affect, interpersonal interactions, and will. His offering was aimed at improving diagnosis, but it did not resolve the controversy over the nature of schizophrenia.

Kramer noted that first admission rates for schizophrenics were higher in the United States than in the Britain. This led to the US-UK project (Cooper, Kendall, Gurland, Sharp, Copeland, and Simon, 1972; Gurland, Fleiss, Cooper, Kendall, and Simon, 1969) which clearly showed that different diagnostic practices were being employed between the two countries. These findings led to subsequent improvements in diagnostic technique such as the Present State Examination (Wing, Birley, Cooper, Graham, and Isaacs, 1967) and the CATEGO, a diagnostically oriented computer program. These were used in The International Pilot Study of Schizophrenia (World Health Organization, 1973), all of which led to improvements in diagnostic systems.

Psychodiagnostic Systems

The Research Diagnostic Criteria (RDC) (Spitzer, Endicott, and Robins, 1975, 1978) evolved from the "Feighner" criteria (Feighner, Robins, Guze, Woodruff, and Winokur, 1972). It employed structured interviews to elicit characteristic operationally defined symptoms of different disorders. A diagnosis of schizophrenia required: (1)

significant or specified delusions, hallucinations (usually auditory), or disorganized thought, affect, or behavior; (2) two weeks duration of the active phase; and (3) the absence of bipolar syndromes. It was subdivided into Paranoid, Disorganized, Catatonic, Mixed (undifferentiated), and Residual types. It was also divided into acute, subacute, subchronic, and subchronic phases. The RDC influenced the development of the DSM-III, resulting in a narrower definition of schizophrenia and an increase in the reliability of its diagnosis.

The DSM-III-R (1987) defined schizophrenia as a disturbance of at least six months duration which included the presence of an active phase lasting at least a week. This phase included delusions, hallucinations (especially of voices), incoherence or loosening of associations, catatonic behavior, or grossly inappropriate affect. The lengthy course was marked by a significant deterioration from previous functioning prior to the active phase. There may or may not be prodromal and/or residual symptom phases. Finally, other disorders must be ruled out. Both the DSM-III and the DSM-III-R included Disorganized, Paranoid, Catatonic, Undifferentiated, and Residual subtypes. The only significant difference between the DSM-III and the DSM-III-R was that the latter added a further division of the course into Subchronic, Chronic, Subchronic with Acute Exacerbation, Chronic with Acute Exacerbation, and In Remission.

There are differences between the RDC and the DSM-III. The RDC requires at least two of the three major symptoms (delusions, hallucinations, and disorganization) for a definite diagnosis, whereas the DSM-III requires only one. Also, the RDC puts more emphasis on the exclusion of bipolar features than the DSM-III. By contrast, the RDC is more inclusive than the DSM-III because it requires that the disorder only be of two weeks duration. The DSM-III emphasizes the chronicity of the disorder as well as a deterioration from previous functioning.

This suggests the importance of diagnostic reliability and concordance issues for studies such as this one, which employs groups diagnosed by different systems. As Bland and Kolada (1988) pointed out, there are several possible sources of unreliability in research involving diagnoses of psychopathology in subjects. These include inconsistent self-presentation by the subject, different interviewing techniques of the diagnostician, clinicians' differences in judging the importance and interpretation of symptoms, and inadequacies of the diagnostic systems (particularly unclear and nonspecific criteria).

Some studies have compared the DSM-III and RDC diagnoses for reliability and validity. Endicott, Nee, Fleiss, Cohen, Williams, and Simon (1982) examined the joint frequencies and reliabilities of these and other criteria sets for the diagnosis of schizophrenia. The RDC and the DSM-III performed

at basically equivalent rates. They diagnosed 18 and 19 cases of schizophrenia, respectively, from a pool of 46 subjects, and they agreed in 14 specific cases. Cases of disagreement reflected differences in diagnostic criteria: RDC tended to diagnose schizophrenia in cases excluded by DSM-III because of their brief course. Conversely, DSM-III tended to diagnose schizophrenia where the RDC labeled the patient schizoaffective, because of the greater prominence of bipolar features.

McGlashan (1984) also compared these two systems. He applied them and two other systems to the retrospective diagnoses of 400 patient records. Tests were made for reliability, comprehensiveness, concordance with established clinical use, specificity, and predictive validity. The RDC and the DSM-III showed similar comprehensiveness, respectively diagnosing 33% and 35% of the patients as schizophrenic. They showed similar abilities to distinguish major syndromes, and were alike in diagnostic stability and outcome prediction. The author concluded that the "DSM-III appears to hold the edge at present over the other systems for clinical purposes" (p. 144), while the RDC "behaved" most like the DSM-III.

Kendler, Gruenberg, and Tsuang (1984) examined outcomes of subtypes of schizophrenia defined by different systems. They compared the RDC, DSM-III, and two other criteria sets. All the systems held that paranoid schizophrenics had better short-term and long-term outcomes than the non-paranoid

schizophrenics. There were no significant differences in outcome for the two main non-paranoid subtypes: hebephrenic (disorganized) and undifferentiated.

Reality Testing and Thought Disorder

Marengo and Harrow (1988) listed the classic symptoms of thought disorder: associative disturbances (especially losses of goal orientation); illogicality; concrete thinking; conceptual overinclusion; intermingling (when personal themes interpenetrate thought processes); autistic or purely personal thinking; poverty of content of speech; incoherence; perseveration; clanging; echolalia; and poverty in the amount of speech. Thinking disorder may also show as thought blocking. It is unclear whether this results from the confusion or competition of thoughts, an inability to generate a thought, or an obstinate mutism. Andreasen, Hoffman, and Grove (1985) also pointed to pressure of speech, distractible speech, and neologisms as symptoms of thought disorder. Disturbances in associative processes have been regarded as primary symptoms since the time of Kraepelin and Bleuler. Evidence for this is found in the "ample documentation" showing that chronic schizophrenics' associations are subject to more distractions, disruptions, and intrusions than are other patients or normals (Rabin, Doneson, & Jentons, 1979, p. 193).

Andreasen, Hoffman, and Grove (1985) directed their research toward the nature and kinds of formal thought disorder and their importance in different diagnostic categories. They found that, as a broad class, disorganized speech appeared importantly in all of the three major psychoses: manic, depressive, and schizophrenic. However, closer inspection revealed different patterns of thought disorder symptoms for the diagnostic categories. Depressives demonstrated little or no incoherence, illogicality, loss of speech goals, or perseveration when compared to the other two categories. Schizophrenics showed poverty of speech and poverty of speech content significantly more than manics. Their poverty of content was greater than that of depressives. Among positive symptoms, schizophrenics showed associative disturbances such as pressure of speech, tangentiality, derailment, incoherence, and illogicality. While manics showed a like prevalence of loose associations, their pressure of speech was significantly greater than that of schizophrenics. Storms and Broen (1972) found that schizophrenics produced or responded to significantly more idiosyncratic associations than did nonschizophrenic patients in association and concept-identification tasks.

Harrow and his associates (Harrow and Quinlin, 1985; Marengo and Harrow, 1988) also found that thinking problems were apparent in major disorders other than schizophrenia. They also found that thought disorder was heterogeneous within

schizophrenia, since patients in the various subcategories showed a range of type, frequency, and severity of such cognitive impairment. In addition, they found that certain expressions of thought disorder varied according to the phase of the illness. For example, concrete thinking, conceptual overinclusion, behavioral overinclusion, depersonalization, and, by degrees, boundary disturbances were more prominent in the acute stages of the disease. By contrast, negative symptoms (especially impoverished thinking) were more prevalent in later stages.

Thus, research data appeared to contradict Bleuler's view that thought disorder was pathognomonic of the disease. Still, it was more frequent and persistent in this disorder than others, and the pattern of thought disorder differed among diagnostic groups. Finally, there was evidence that the degree of disturbed thinking was a valuable index of the severity of psychopathology (Harrow and Quinlin, 1977, 1985; Holzman, Shenton, and Solovay, 1986; Johnston and Holzman, 1979; Jones, 1977). This is based on the idea that disordered thinking is manifested along a range of severity. Finally, there were no "universal" themes in the disordered speech of schizophrenics. Rather, speech content reflected personal themes and preoccupations. This pointed to the interaction of thinking deficits and individual psychodynamics (Harrow and Quinlin, 1985). However, while individual and cultural factors will affect content, the form and process of different

thought disorder symptoms follow general transindividual structural rules.

Schizophrenics often experience symptoms of depersonalization, fusion, thought control and other delusions that their feelings, impulses, and acts are under the will of other people. Mednick theorized that schizophrenics were characterized by a significantly higher physiological reaction to mild stress, rapid conditioning of responses, and excessive stimulus generalization reactivity (Kaplan and Sadock, 1981). Blatt and his associates, based on a series of studies (Blatt, Brenneis, Schimek, and Glick, 1976; Blatt and Ritzler, 1974; Blatt and Wild, 1976; Blatt, Wild, and Ritzler, 1975; Quinlin and Harrow 1974; and Quinlin, Harrow, Tucker, and Carlson, 1972), were concerned with the schizophrenic's difficulty distinguishing external objects from their internal representations and experiences of them. The authors theorized that this resulted in various degrees of fusion, merging, and contamination in the structural aspects of thought and perception.

Affective Responsiveness

Lewine and Sommers (1985) described the negative symptoms of schizophrenia. In the affective sphere these included loss of drive, emotional blunting, anhedonia, and emptiness. These were associated with symptoms of inappropriate fatigue,

anxiety, irritability, and subdepressive moods. Positive affective symptoms in schizophrenia involved inappropriate expressions of affect, including lability and affects that did not match their referents in quality, tone, degree, and other features.

Problems of affect have been noted by most observers of schizophrenia, but their precise relationship to the disorder is controversial. Kraepelin's focus on loss of will leading to emotional indifference can be understood as "blunted affect" (Lewine & Sommers, 1985). He thought that the schizophrenic had lost the capacity to produce affects. Bleuler thought that it was the cognitive disorder that prevented the schizophrenic from marshalling a well organized affective response.

Beck (1965) emphasized the importance of the schizophrenic's lability while recognizing negative symptoms in the disorder. He described this affective expressiveness in terms of hypersensitivity, and argued that it was natural and purposeful: "the lability behaviors are one way of a person's transactions in his object relations. As outward release of his emotions, they are action away from the patient and into or upon his environment" (1965, p. 59). He also said: "Affectivity as essence of fantasy is clinically axiomatic" (ibid, p. 79), and wrote that certain fantasies and hallucinations were generated as adaptations to an oversensitivity to social judgments. Yet he said that the "schizophrenic's frus-

trations ... result from his distorted perceptions" (p. 55), also indicating that they could result from ego or cognitive deficits. He also noted differences between acute and chronic sufferers, including the withdrawn negative symptom picture of the chronically impaired or "fixed tone" patients.

The disagreement over the importance of schizophrenic affect appears elsewhere. Schneider's (1959) First Rank Symptoms did not consider affect at all. Similarly, Spitzer, et.al.'s (1978) RDC required only that the schizophrenic lack manic and depressive symptoms so that a differential diagnosis could be made. In the DSM-III-R (1987) schizoaffective and mood disorders must likewise be ruled out. Moreover, they present flat or grossly inappropriate affect as assisting the diagnosis, but these alone will not imply schizophrenia.

By contrast, Knight and Roff (1985) reviewed evidence from the domains of discriminant and predictive validity supporting the importance of affective symptoms as diagnostic criteria. For example, they found that flatness of affect was a better discriminator of manic and schizophrenic psychoses than thought disorder. Also, affective deficits were consistently correlated with poor prognosis in schizophrenics, while thought disorder was an inadequate predictor.

Ho (1974) tested schizophrenics' abilities at goal-directed thinking. He found that chronic schizophrenics did not use primary thinking in explaining non-emotional events, nor were they different from normals when reasoning with

symbolic material. However, they showed more faulty deductive reasoning when analyzing emotional material.

Schizophrenia is often described in terms of aberrant affective experience and expression, including range of display, intensity, lability, and appropriateness (Kaplan and Sadock, 1981). Schizophrenics can be emotionally reactive and show poor affective modulation. On the other hand, their poor affective modulation can have a "fixed tone" quality, as in emotional impoverishment or blunting. They fail to demonstrate "spontaneous affect, with control" (Beck, 1965, p. 51). Similarly, flat or blunted affective expression has been used as a symptom contributing to the diagnosis of schizophrenia (Rabin, Doneson, and Jentons, 1979). Thus the affective responsiveness of schizophrenics apparently presents a bimodal distribution.

Subtypes of Schizophrenia

Schizophrenia is divided into different subtypes, but agreement on specific subtypes has been another ongoing problem. The uncertainty about subtypes is reflected in changes in the various DSM's over the years. Gone is the Simple schizophrenic, who between the DSM-II (1968) and DSM-III (1980) became the Schizoid personality. Also, Pseudo-neurotic schizophrenia and Pseudopsychopathic schizophrenia have been deleted from the DSM altogether. Currently, the

DSM-III-R includes the Catatonic, Disorganized, Paranoid, Undifferentiated, and Residual types of schizophrenia (1987).

The DSM-III-R criteria for diagnosing paranoid schizophrenia were based on the prevalence of persecutory, grandiose, or jealous delusions or hallucinations with similar themes. Exclusion criteria were incoherence, marked loosening of associations, flat or grossly inappropriate affect, and catatonic and grossly disorganized behavior (American Psychiatric Association, 1987). These features were more characteristic of the other subcategories.

Andreasen, et.al. (1985) found significant differences in symptomatology between hebephrenic (disorganized) and paranoid schizophrenics. They found that hebephrenics had a greater prevalence of poverty of speech content, illogicality, and perseveration. Also, on follow-up the hebephrenics showed greater tangentiality, derailment, circumstantiality, and loss of the goal of speech. In a separate study, Andreasen and Grove (1986) confirmed the increased poverty of content and incoherence in hebephrenics when compared to paranoids.

Buss and Lang (1965) reported that paranoids were superior to non-paranoids on a variety of cognitive tasks, and Harrow and Quinlin (1985) supported this view. Chapman and Chapman (1973) indicated that paranoids were expected to show less disorganized thinking than other schizophrenics.

Magaro's (1981) literature review of cognition in schizophrenia suggested a significant stylistic difference between

paranoids and non-paranoids. The data indicated that paranoids relied on a conceptual processing style without adequate use of perceptual restraints, while other schizophrenics relied on perceptual processes without appropriate classification through conceptual processing.

Follow-up studies in the 1970's indicated that paranoids had better outcomes than non-schizophrenics (Stephens, 1978; Strauss and Carpenter, 1978; Tsuang and Winokur, 1974). Kendler, Gruenberg, and Tsuang (1984) found that paranoids had better outcomes than non-paranoids on psychosocial and occupational dimensions, but not on psychiatric status. Moreover, when outcomes were monitored over periods longer than two years, there were no significant differences. This instability in subtype over time was fortified in a subsequent study by these authors (Kendler, Gruenberg, and Tsuang, 1985).

Overall, the validity of the distinction between paranoid and non-paranoid schizophrenics receives variable support. As Marengo and Harrow (1988) indicated, the differences in the presence and severity of thought disorder were not convincingly explained by subtype differences. Seen from another angle, Carpenter, Heinrichs, and Wagman noted that schizophrenia "may be medicine's prime example of a diversity of clinical manifestations within a single diagnostic class" (1985, p. 25). This would perhaps be true if the disorders represented different individual manifestations of the same basic underlying pathogenic process.

Rorschach Performance of Schizophrenics

In 1945 Piotrowski used the Rorschach to examine "mild" forms of schizophrenia. He said there were three main ways to use inkblot test results to aid diagnosis. The first identified pathognomonic signs of the disorder, such as the use of position on the blot to justify a percept and "inconstant percepts of variable dimness" and clarity (p. 190). This method was specific but unreliable, and it used little of the record. The second technique compared scores between groups. This method had high generality but less validity, since "[t]here are few schizophrenics whose records contain all the components characteristic of the schizophrenic group as a whole" (p. 191). The third method was the "Systematic Diagnostic Procedure" (ibid), traced to Rorschach's 1921 monograph. This involved analyzing the covariation of variables. He found that schizophrenics used color more and movement less in their justifications of percepts. Moreover, normals used FC more than schizophrenics, while the reverse was true for CF and pure C.

In 1949 Beck discussed the significance of Rorschach factors for schizophrenia. Schizophrenics were noted for their "tangential elaboration of details, with development of extraneous material irrelevant to the association proper" (p. 57). Contamination, or "impossible mixings," were also to be found in the records of this population. Perseverative

returns to particular associations or personalized themes were also found. Beck discussed the use of form and good form by different patient groups. Good form indicates that the personality is stable and has ego strength in the form of a respect for reality. However, the schizophrenic "is throwing overboard the world's standards of values," (p. 21) and will thus generally show low F+%. By contrast, they will show higher color use, and dominance of color over form when they occur together. Both suggested deficits in affective modulation to Beck. Also, color-naming was said to be high. However, a low use of color can be expected from the simple type of schizophrenic. On the other hand, the schizophrenic's Affective Ratio was estimated to be low, displaying the diminished cognitive responsiveness to emotional stimuli. People with the disorder show an occasional idiosyncratic justification of responses based on the physical position of the blot detail.

Despite much criticism of projective testing and the Rorschach in particular in the 60's and 70's (Singer, 1978), the Rorschach was still effective in the diagnosis of schizophrenia. Rapaport, Gill, and Schafer's (1968) exposition on deviant verbalizations was particularly successful. As a result, indices of odd speech reflecting thinking problems occur in a number of systems. It has been included in Burstein and Loucks' system (1989), though some features of Rapaport's index are scored elsewhere in their system as

contradictions of reality, predicate thinking, and other logical and associational disorders.

Although significant differences exist in test stimuli and administration between the Rorschach and the Holtzman Inkblot Technique, Holtzman also said: "Pathognomic Verbalization has been shown to be the best single indicator of [schizophrenic] psychopathology." (1988, p. 583). Similarly, he also included loss of distance, fabulized combinations, contaminations, and faulty fantastic reasoning among the perceptual-cognitive characteristics given by schizophrenics.

Using a Thought Disorder Index (TDI), Holzman, et.al. (1985) examined manics, schizophrenics, and normals. Findings were analyzed using a factor analytic method, a grouping of symptoms based on a priori considerations, and a post hoc grouping of symptoms.

The factor analytic method revealed six factors: (1) Idiosyncratic (peculiar and queer) Verbalizations; (2) Expansive Thinking, including playful CONFAB's, flippancy, INCOM's and FABCOMs; (3) Autistic Thinking, comprising autistic logic and incoherence; (4) Fluid Thinking, including CONTAM's; (5) Absurdity, including neologisms; and (6) Confusion and vagueness. Manic patients' protocols were uniquely and very significantly correlated with Expansive Thinking, while the schizophrenics' protocols were not. By contrast, the schizophrenics' protocols were correlated with each of the other factors to a moderate but significant

degree, while the manics' protocols were correlated with none of them to a significant degree.

Based on a priori reasoning, each thought disorder category was assigned to one of four conceptual groups: associative looseness, combinatorial thinking, disorganized thinking, and unconventional verbalizations. It was found that associative looseness, including clanging, perseveration, and fluidity, was characteristic of both manics and schizophrenics. Manics showed a significant level of combinatorial thinking symptoms, including INCOM, FABCOM, CONFAB, CONTAM, and autistic logic, while schizophrenics showed significant levels of disorganized thinking, i.e., confusion, incoherence, vagueness, and word-finding problems and unconventional verbalizations such as absurdities and neologisms. These findings were similar to those of the factor analytic study.

Post hoc regrouping of the TDI symptoms gave five distinct conceptual classes: combinatorial responses, irrelevant intrusions, confused thinking, fluid thinking, and peculiar responses. Manics were clearly characterized by combinatorial thinking in their use of INCOM's, FABCOM's, and playful CONFAB's, as well as irrelevant intrusions. By contrast, schizophrenics were associated with confused thinking, including absurdities, incoherence, neologisms, and word-finding difficulty; fluid thinking, including relationship responses and CONTAM's; and peculiar verbalizations.

Categories that did not seem to distinguish the two diagnostic groups included inappropriate distance, excluding flippancy; vagueness; clanging; perseveration; symbolism; queer responses; CONFAB's, excluding playful CONFAB's; and autistic logic.

Other factor analyses of schizophrenics' Rorschach responses employed the traditional ten cards and technical protocol. To examine thought disorder Harrow and Quinlin (1985) developed three scoring categories called Deviant Thought Quality, Overspecificity, and Affect Elaboration to describe Verbalization Scores. Deviant Thought Quality was defined in terms of verbal peculiarities, illogical associations, CONFAB, and reality contradictions. Overspecificity was scored when the subject showed a loss of distance from the blot or task, or when they justified their perceptions in a purely egocentric way. Affect Elaboration was scored when human emotions were attributed to imagined contents, or when the subject reacted with personal emotions during the response. They found that schizophrenics had a Deviant Thought Quality index significantly higher than the other groups ($p < .01$ in all cases), as well as a higher Overspecificity index than character disordered and depressed groups ($p < .01$ in both cases). There were no significant differences between schizophrenics and other groups on Affect Elaboration.

To establish how the verbalization scores related to other indices of disordered thinking the authors performed a

factor analysis on numerous Rorschach indices. They found three basic factors in thought disorder, titled Ideational Disturbance, Productive Richness/Mild Disturbance, and Affective/Perceptual Diffusion. Indices that loaded on Ideational Disturbance included severe (not mild) deviant thought quality, severe overspecificity, severe affective elaboration, CONTAM's, FABCOM's, and primitive unsocialized drives. This factor accounted for most of the variance in the analysis, and loaded on almost all the scores related to severe thought disorder.

According to Kaplan and Sadock (1981), the presence of Exner's CONFAB or CONTAM responses in Rorschach protocols were nearly pathognomonic for schizophrenia. The CONFAB occurs rarely, with a 27% frequency rate found among Rapaport's schizophrenic population (1946/1968), and a 0% rate found in Exner's sample (1986a, 1986b). This difference is possibly attributable to differences in inquiry strategies. While Meloy and Singer (1985) said that this score probably had little use because it was insensitive and nonspecific, but it seemed to indicate significant boundary and/or thinking disorders when it did appear. CONTAM responses were also rare, and Kaplan and Sadock (1981) noted that the schizophrenic's thought disorder, perceptual disturbance, and interpersonal inappropriateness were also reflected in other more common Rorschach responses. These included poor form quality, conceptual perseverations, lack of human content and

movement responses, bizarre content, and few popular responses.

Exner's (1985) own method for using the Rorschach to assist in diagnosing schizophrenia was empirical. He came up with a collection of scoring decisions whose outcomes were found related to the presence or absence of schizophrenia. In 1985 these decisions included: 1) $X+\% < 70$; 2) $\text{Sum FQ-} > \text{FQu}$, or $X-\% > 20$; 3) $M- > 0$ or $\text{WSum6} > 11$; 4) $\text{Sum DV} + \text{DR} + \text{INCOM} + \text{FABCOM} + \text{ALOG} + \text{CONTAM} > 4$; and 5) $\text{Sum DR} + \text{FABCOM} + \text{ALOG} + \text{CONTAM} > \text{Sum DV} + \text{INCOM}$ or $M- > 1$. These decisions reflected certain phenomenological, verbal, and/or interpersonal behaviors or experiences. The first two rules both related to reality testing, defined as consensual agreement with a normal population on the formal use of blot areas. Use of good pure form quality was reflected in FQu and FQ-. $X+\%$ and $X-\%$ were more closely related to Burstein and Loucks' $B+\%$, reflecting the additional influences of subjective, ideational, and motivational agents together with respect for denotative characteristics. A Deviant Verbalization (DV) involved the use of neologisms and idiosyncratic redundancies. Rapaport and his colleagues found a 7% frequency rate for neologisms in schizophrenia (1968). Holtzman reportedly found a 4% frequency rate with his schizophrenic sample. Although Exner found notably higher rates in different samples, including character disorders, this was attributed to his broader definition of a DV. Meloy and Singer (1985) suggested that

Exner's DV1's (mild DV's) may have neither discriminating power nor interpretable meaning, while DV2's (extreme DV's) may be rare but specific to schizophrenia in their representation of neologistic condensation. The Deviant Response (DR) reflects inappropriate or irrelevant phrases and responses that reveal problems in achieving object definition. The INCOM includes single percepts with impossible features and the FABCOM reflects an implausible relation between two entities. The ALOG is scored when the subject spontaneously uses strained, loose, or unconventional reasoning to justify the percept. These include responses where the subject justifies the percept based on the concrete use of size, spatial elements, or coloring; as well as responses based on non-criterial characteristics. Findings seem to indicate that this special score is specific to schizophrenia and more sensitive to it than the CONTAM (Exner, 1986a, 1986b; Johnston and Holzman, 1979; Rapaport, et.al., 1946/68). The presence of four of these five indices suggests schizophrenia, while the presence of all five strongly suggests it. Exner's research indicated that the best indices for distinguishing schizophrenia from both other groups included $X + \% < .70$, $F + \% < .70$, $X - \% > .15$, and $SCZI = 5$. These suggest problems in consensual reality testing.

Blatt and Ritzler (1974) found that among subjects who gave CONTAM, CONFAB, and FABCOM scores, each tended to respond with only one sort of special score per record. When they did

give more than one sort, they were usually in CONFAB-FABCOM or CONTAM-CONFAB pairs. So the authors examined five groups of subjects whose records were characterized by the special scores they tended to use. These were, in order of decreasing severity of pathology: CONTAM-CONFAB, CONFAB, CONFAB-FABCOM, FABCOM, and combinations. The authors found that subjects using the more severe CONTAM-CONFAB and CONFAB cognitions were more likely to be diagnosed as psychotic than subjects from other groups. Also, patients with these greater disturbances had significantly lower F%'s and F+%'s. They tended to display reduced affective control, as shown in higher WSUMC and related scores. The authors described these scores and their implications in terms of severity of boundary disturbance.

Other researchers have viewed special scores in terms of boundary development and disturbance. Wilson (1985) also arranged scores on a continuum of severity, from least to greatest boundary disturbance: FABCOM benign, fabulized CONFAB, CONFAB tendency, CONFAB, FABCOM malignant, and CONTAM. He found that a schizophrenic group scored significantly higher on indices of self-other boundary disturbance. Similarly, Lerner, Sugarman, and Barbour (1985) drew on Blatt's and Ritzler's (1974) boundary development scale to find that schizophrenics revealed severe self-other boundary disturbances.

Mason, Cohen, and Exner (1985) found that schizophrenics gave significantly higher Lambda, and SumSpSc than depressed inpatients or nonpatient control subjects. By contrast, they gave significantly lower X+% and Afr than normals (among others). A factor analysis turned up three factors for each of the three groups. The first factor for schizophrenics implied that they display problems in thinking when they attempt to organize an ambiguous situation. Thus they retreat from organization, affect, and ideation into a purely denotative simplicity. So it appears that "organizational activity is an important link between the problems of schizophrenic thinking and their heightened experiences of affect. ...[D]isordered thinking is related to conflicts surrounding the expression or internalization of affect" (p. 302).

The schizophrenic's lack of perceptual accuracy in Rorschach performance has been found repeatedly (e.g., di Nuovo, Laicardi, and Tobino, 1988). Since virtually all the scoring systems use some measure of the good use of form as an index of consensual reality testing (Exner, 1969), Harder and Ritzler (1979) set out to compare some of these systems on this dimension. They scored Rorschachs from psychotic and non-psychotic subjects using the form-level scoring systems of Beck, Mayman, Becker, and Wilensky. While there were no differences between subject groups with Beck's system, all

other systems resulted in psychotics showing poorer reality testing seen in poor form quality.

Holt (1970) developed a system of narrowly scoring Rorschach responses for evidence of psychoanalytically defined primary processes such as condensation and displacement. Of the four general categories of scores in his system (Content, Formal, Control and Defense, and Overall Ratings), Formal scores were most relevant to the Burstein and Loucks (1989) Perceptual-Cognitive indices. However, there are no simple comparisons of these scoring systems. For example, Burstein and Loucks' Contradiction of Reality can be applied to at least some cases of four out of five of Holt's Formal score categories. The reason is that the two systems employ different descriptive starting points. Holt was narrowly interested in evidence of specific psychodynamic processes, while Burstein and Loucks' Perceptual-Cognitive scores reflect different linguistic, logical, and phenomenological structures. Nevertheless, Holt's work provided conceptual support for examining these Burstein and Loucks scores, since the overlap of scores presumably reflected different aspects of complex primitive or regressed cognitive processes. In addition, Holt's system did analyze responses for form level or quality using Mayman's (1960) method of rating nine levels of form quality. However, the Holt and Burstein and Loucks systems identified and organized form quality with different rules, disallowing direct comparisons.

McReynolds (1966) employed the Concept Evaluation Technique (CET) with schizophrenic and normal subjects. This involved presenting subjects with 50 designated inkblot areas and asking whether each could or could not be a given concept such as fish, tree, etc. Scores reflected looseness-strictness of cognitive categorization, conformity-idiosyncrasy of cognitive content, and number of consensually "correct" responses. Prior research indicated that the first two indices successfully distinguished paranoid and nonparanoid schizophrenics, chronic and acute schizophrenics, and schizophrenics and nonschizophrenics. The last index "reflects the extent to which the subject perceives and categorizes the test stimuli in the way that normals do" (ibid, p. 264). Data showed that the new scale successfully differentiated normals from hospitalized schizophrenics.

Beck said: "Much erratic Rorschach perception could not be related to any known personal dynamic in the particular patient and was explicable as due only to unconstrained emotional currents" (ibid, p. 72). Somewhat similarly, Blatt and Ritzler (1974) also found that problems in affective modulation were associated with Rorschach indices of thought disorder or boundary disturbance. Exner (1986a), in reviewing the Rorschach and schizophrenia, emphasized the restricted affect displayed by members of this diagnostic group. Suzuki, Peters, Weisbender, and Gillespie (1987) found that both

Japanese and American schizophrenics showed weakened control over emotional stimuli.

In conclusion, a large body of research and theory attempted to clarify the Rorschach variables that identify schizophrenia. Among the most frequently cited were deviant verbalization, CONTAM, contradiction of reality, and FABCOM. CONFAB is also frequently cited, including various responses justified on the basis of percept position or otherwise revealing use of predicate thinking. Schizophrenics were commonly said to reveal associative problems seen in confusion, vagueness, tangentiality, fluidity, loss of distance, perseveration, and egocentric thinking. A few studies pointed to high scores for F% or Lambda, color, INCOM, bizarre content, affective toning, and Affective Ratio in schizophrenics when compared to other groups.

Note that a few studies contradict the above findings because they obtained low levels of CONFAB, INCOM, FABCOM, and Affective Ratio in their schizophrenics. However, all these variables except the Affective Ratio clearly showed a trend to be positively correlated with schizophrenia, so that the few negative relations were exceptional. The findings for Affective Ratio were overall few and contradictory. Some studies also pointed to low levels of popular, human, and movement responses in schizophrenics.

The variable with the single most consistent negative relation to schizophrenia was good form quality. "All of the

Systems interpret the lack of good quality of Form to be suggestive of some malfunction in reality testing" (Exner, 1969, p. 234) when reality testing is defined as the ability to agree with other people about the nature of external or objective reality (Exner, 1974, 1986a). All systems agreed that schizophrenics will generally show poor form quality in their responses.

Burstein and Loucks Variables

The variables of specific interest were abbreviated F% (proportion of pure form responses), F+% (proportion of consensually appropriate pure form responses), B+% (proportion of consensually appropriate responses employing affective or imaginal justifications), Afr (Affective Ratio), CR (Contradiction of Reality), PT (Predicate Thinking), VP (Extreme Verbal Peculiarity), (VP) (Mild Verbal Peculiarity), PSD (Perceptual Stabilization Defect), and LD (Loss of Distance). These were chosen to reflect aspects of objectivity, affective responsiveness, reality testing, and thought disorder.

The use of "pure form" refers to justifications based on shape alone, without reference to other determinants such as color, shading, or movement. F% is calculated as the ratio of the number of pure F responses to the total number of responses in the individual record. Exner reported that

"[e]ach of the Systems includes Rorschach's postulate that Form responses are indicative of the ability to perceive things conventionally and respond to them in a manner relatively free of affective domination" (1969, p. 234). Interpretatively, pure form use expresses the subject's tendency to dwell in the purely objective or denotative aspects of the world.

F+% is the extent to which a subject's pure form responses conform to those perceived by a normal population. F+ is scored when a response is justified purely on the basis of form or shape alone and responses like it are empirically found to be used by normal subjects in contrast to psychotic subjects. F+% is calculated as the ratio of all pure F+ responses divided by the total number of pure F responses. As an ego function it modulates the relation of the whole self to the environment.

Subjects can also use other determinants or imaginal qualities to justify their perceptions of the Rorschach blot. This generates a collection of "non-pure" or "B" responses. An additional index, B+%, is derived as the ratio of the number of those consensually validated (as described above) B responses over the total number of B responses. Developed by Lerner (1968) using Burstein's idea, it is analogous to F+% in that it is a measure of reality testing. However, it is concerned with this ego function when it is under the

relatively greater influence of affective and connotational pressures.

Determinants other than form that may influence B+% include color (C), artificial color (Ca), inappropriate color (Ci), projected color (Cp), achromatic color (C'), and shading (Sh). Imaginal qualities that influence B+% include human, animal, and object movement (HM, AM, and OM, respectively), human emotion (HE), vista (V), and texture (T) scores. They are not justifications in the Burstein-Loucks system because they do not reflect actual qualities of the blot like form, color, and shading. They are imaginal qualities because they represent the subjects' projected fantasies. This suggests the interpretational significance of each of these scores, and their combined influences. Given the various proposed interpretive values of these indices (Exner, 1969), B+% may potentially be influenced by the following: introspection, management of anxiety, feelings of inferiority, intelligence, aesthetics (V); infantile erotic needs, affection, dependency (T); experiences of chaos, loss of control, personal disintegration (OM); primitive urges or self-concepts (AM); empathy and affective projection (HE); adaptation through introspection, adaptive ego functions, awareness of the world, anticipation, fantasy life, and object relations (HM). Thus, all aspects of subjective experience may influence B+%.

Note that the determination of response appropriateness in the Burstein and Loucks scoring system (as with other sys-

tems) is based on frequency tables developed by Samuel Beck from the responses of normal and psychotic subjects. However, these subjects were from the United States, so that "normal" perceptions may only be normal in the context of Western cultural experience. For example, to be able to see Card II (the whole blot) as a Christmas tree ornament (a good form quality response, according to the relevant frequency table) depends on experience with the Western cultural representations that surround Christmas. These would presumably be unavailable or experience-distant to most Chinese. Obversely, analogous responses may be offered by Chinese for the American Christmas tree ornament.

However, Burstein (1991) has posited that current norm tables should be valid for determining response appropriateness across cultures and gave several reasons. First, the large majority of perceptions involve animals, humans and natural phenomena, which would be essentially free of cross-cultural biases regarding the determination of response appropriateness using current tables. In addition, the scorer in Burstein and Loucks' system is allowed some degree of freedom in the determination of consensuality. This would lessen the influences of culturally different details or due to more narrow categorizations of percepts. (For example, the response "a snow leopard" could be scored as appropriate use of form when the category of appropriate responses included "tiger.") Finally, Burstein felt that the research on popu-

lars indicated that people have such perceptions regardless of cultural background. However, research on Chinese populars gave mixed results, some of them apparently culturally grounded (Yang, Tzuo, and Wu, 1963). In any case, since there are no tables for response appropriateness developed from analogous Chinese groups, the determination of response appropriateness, and hence F+% and B+%, can only be derived from Western norms.

The Affective Ratio (Afr) indexes affective responsiveness by measuring the willingness or tendency to respond to affective stimuli. Since color responses in the Rorschach are understood to relate directly to affectivity, level of responsiveness to color is the focal information. This ratio is found by dividing the number of responses to the purely chromatic cards by the number of responses to all other cards.

It is noteworthy that the Affective Ratio is less affected by language complications than the other variables, since it is tabulated using response rate rather than linguistic meaning. That is, to influence the Affective Ratio one must show differential response rates to the different cards, and no reference to language is made other than to identify the response as such. However, to contribute to the other variables the subject must use meaningful language to justify or describe their experience of the blot. Moreover, contributions to the other variables are usually made in the context of a dialogue with the examiner. This is not true

with the Affective Ratio. This all suggests that the Afr is a more valid and secure tool for assessing differences across the two cultures than an index whose medium was language and meaning.

Contradiction of Reality (CR) is a score given when the subject offers a percept combination that does not occur in reality, adds to or distorts the parts of an otherwise realistic entity, violates logical spatial organization, violates sizes and proportions found in nature, mixes percepts inappropriately, or otherwise incorporates internal contradictions in their percepts.

Predicate Thinking (PT) also indicates the use of poor logic in the determination of perceptions. It is scored when a subject relies exclusively on a non-criterial characteristic to justify a response, confabulates by perceiving a large entity based on perceiving only a part or parts of it, justifies a percept based on its relative location on the blot, or inappropriately generalizes from one percept to another based on a non-criterial attribute held in common between them.

Verbal Peculiarity (VP) assays extreme or pathological language usage, including significant syntax and semantic violations. VP includes neologisms, clanging, and metonymic distortions such as "[a] crab that has captured his first menu of the day" (Burstein and Loucks, 1989, p. 71). Mild Verbal Peculiarity [(VP)], measures language oddities of a less

pathological but still scorable degree. In (VP), the violations of syntax or semantics are less clear but still idiosyncratic, so that they are not quite an appropriate communication in the testing situation.

Perceptual Stabilization Defect (PSD) indicates difficulties in establishing a stable percept. Several examples will reveal a fusion of figure and ground, an experience of the blot actually changing, or contaminations.

Finally, Loss of Distance (LD) measures poor personal boundary establishment and problems with the modulation and control of incoming information and associations. LD is scored when the subject becomes too involved in the blot, transcending normal boundaries implicit in the test context. This is reflected in overly personalized responses such as "Oh my gosh! Insects coming at me" (Burstein and Loucks, 1989, p. 65).

Rorschach Reliability

Opponents of the Rorschach as a research tool often point to its alleged unreliability as a reason for their viewpoint. Parker (1983) performed a meta-analysis of reliability levels reported in Rorschach studies between 1971 and 1980. He found reliabilities on the order of .83 and higher, and validity coefficients of .45 and higher. Subsequently the Journal of Personality Assessment issued an Editor's Note (1991) stating

a new policy, where the journal would routinely require evidence of interscorer agreement at the 80% level in Rorschach data submitted for publication.

Similar reliabilities are employed (and required) in studies grounded in the Burstein and Loucks scoring system. A detailed analysis of the procedure for insuring such agreement was offered by Coursol (1990). Inter-rater reliabilities for Burstein and Loucks' Rorschach protocols were established in the following manner: Each protocol was scored independently by two different individuals trained in the Burstein and Loucks system. Then two other trained scorers independently reconciled the first two sets of scores by comparing them and resolving discrepancies. Finally, the two reconciliations were compared for agreement of scores, and these agreements and disagreements were used to compute reliability statistics. Reliabilities were computed by category where applicable, although in the case of Perceptual-Cognitive characteristics they were computed variable by variable because of the large number of variables.

CHAPTER III

HYPOTHESES

The above considerations allowed for a variety of hypotheses to be formulated. Regarding the prevalence of pure form, Chinese may be expected to show a higher F% than Americans. That is, they may be expected to 'dwell' in the formal qualities of their environment more than Americans. This is explained by recognizing that Chinese culture teaches avoidance of subjective justifications for perceptions (and, by extension, actions). That is, Chinese are trained from childhood to control and withhold their emotions. This would tend to increase the F% in their Rorschachs. In addition, findings that translation difficulties related to an increase in the F% are relevant here. The extent to which Chinese would avoid the use of the entire variety of imaginal qualities in their justifications for perceptions was unclear. In contrast to the tendency to avoid affective domination, a culturally inculcated Oriental sense of 'oneness' with the universe (Dien, 1983; Hsu, 1981; Wu, 1985) may be expected to promote use of 'non-separatist' cognitive functions such as intelligence and esthetics. However, because the subjective characteristics of B+ components are dominant and cannot be separated from its other characteristics, and because the tendency to avoid subjective influences on experience is

prominent in Chinese, it was felt that Chinese would eschew offerings of B justifications. Thus, overall F% was predicted to be higher for Chinese than for Americans. It was also expected to be higher for Chinese normals than for American normals, and higher for Chinese schizophrenics than for American schizophrenics. Findings in the literature regarding F% levels of schizophrenics compared to normals were inconsistent. Moreover, theoretical considerations did not suggest a directional expectation for schizophrenic performance on this index. That is, schizophrenics might be expected to generate high F% levels because of a tendency to avoid the confusion of subjective experience. Yet they may also be expected to generate low F%'s because of an inability to modulate affective and internally stimulating experiences. Thus, a directional prediction was not made and F% was predicted to be no different for schizophrenics than for normals. By extension, F% was expected to be no different for Chinese schizophrenics compared with Chinese normals, nor for American schizophrenics compared to American normals. Thus there would be no main effect for Mental Status.

It was felt that using American reference tables to assess the appropriateness of the Chinese' use of form would result in poorer form quality scores for the Oriental subjects. This is because what might otherwise have been a good form quality response in a pure Chinese population would not be represented in the American norm tables, causing a

minus form quality score being attached to that response. Thus, overall $F+\%$ was predicted to be lower for Chinese as compared to Americans. Research consistently indicated that schizophrenics showed poor reality testing, using the $F+\%$ index. By extension, schizophrenics of every culture would be expected in a culture-free test to give an $F+\%$ below normal levels. Thus, overall $F+\%$ was predicted to be lower for schizophrenics compared to controls. By extension, $F+\%$ was expected to be lower for Chinese schizophrenics than for American schizophrenics, and lower for Chinese normals compared to American normals. Also, Chinese schizophrenics were predicted to have a lower $F+\%$ than Chinese normals, and American schizophrenics were predicted to show a lower $F+\%$ than American normals. It was thus predicted that there would be significant main effects for both Mental Status and Culture.

Although Chinese were expected to avoid use of 'B' justifications, this tendency implies nothing about their ability to be consensually appropriate when they do use them. However, the above arguments on the use of Western tables for establishing response appropriateness also apply here. Thus, overall $B+\%$ was expected to be lower for Chinese as compared to Americans. By extension, $B+\%$ was predicted to be lower for Chinese schizophrenics than for American schizophrenics, and lower for Chinese normals compared to American normals. Schizophrenics' problems with reality testing were also

expected to compromise their B+ $\%$ levels. Thus, overall B+ $\%$ was predicted to be lower for schizophrenics as compared to normal subjects. By extension, B+ $\%$ was predicted to be lower for Chinese schizophrenics compared to Chinese normals, and lower for American schizophrenics compared to American normals. Thus, it was predicted that there would be main effects for both Culture and Mental Status.

Han differ from Americans by being acculturated to reserve their affective expressions more. To the extent that this acculturation penetrates to unreflected experience and behavior, it may be mirrored in the Affective Ratio. Thus, overall Afr was expected to be lower for Chinese subjects than for American subjects. Research finding are variable regarding the schizophrenic subjects' Afr's, therefore they were predicted to not differ from normal subjects on this variable. Thus, a main effect was predicted for Culture, but not for Mental Status.

No differences were expected between Chinese and Americans groups in their CR, PT, VP, (VP), PSD, and LD scores. CR, PT, VP, (VP), PSD and LD were predicted to be higher for schizophrenic subjects than for normal subjects. Chinese schizophrenics were predicted to have higher CR, PT, VP, (VP), PSD and LD scores compared to Chinese normals. Finally American schizophrenics were predicted to have higher scores than American normal subjects on these perceptual-cognitive

variables. Thus, a main effect was predicted for Mental Status, but not for Culture.

CHAPTER IV

METHOD

Subjects

The first of the four experimental groups included 53 Chinese schizophrenics whose Rorschachs were administered by Li Shenggang, M.D., in the city of Changsha in the People's Republic of China. They were diagnosed by Dr. Li Shenggang and two other psychiatrists at three sites, either hospitals or clinics. The diagnoses conformed to the Research Diagnostic Criteria (Spitzer, Endicott, and Robins, 1975, 1978), and were arrived at using data from the Schedule for Affective Disorders and Schizophrenia (SADS) (Spitzer, et.al, 1975). The SADS is structured to reflect the RDC. There were 22 (41.5%) paranoid schizophrenics, 16 (30.2%) mixed schizophrenics, 10 (18.9%) disorganized schizophrenics, and 5 (9.4%) others. The mean number of years following their diagnosis was 3.5. Some had been recently hospitalized while others were about to be hospitalized. Some were in the initial stages of receiving medication, while others had been medicated somewhat longer. They were generally in the active phases of the disorder. The subjects were all of the Han cultural group and spoke the Mandarin dialect. All came from the vicinity of the city of Changsha (population approximately

1.3 million), in the province of Hunan in the south-central part of the People's Republic of China. Their ages ranged from the mid-teens through the 50's, with a mean of 25.6 years. There were 28 males and 25 females. The number of years of education averaged 9.7. Occupational status included 26 workers, 11 students, 5 in service industries, and 19 from other areas.

The next group included 53 Chinese normal subjects whose Rorschachs were also administered by Li Shenggang, M.D. The subjects were also Han, spoke Mandarin, and came from Changsha. This group included 28 males and 25 females. Their average age was 25.5 years ($SD = 6.7$), and their education averaged 9.9 years of school ($SD = 2.2$). They were volunteers from several companies and factories in the Changsha area, including but not limited to: the city tax department, a paint and chemical company, an iron/metallurgy institute, and an electronics manufacturer. These individuals were volunteers who received a break from work in exchange for their participation.

Dr. Li Shenggang was the Chinese psychiatrist who originally administered the Rorschach test to the Chinese, and he brought the protocols to the United States. He was participating in the Burstein and Loucks personality research laboratory at the University of Tennessee Psychology Department as an exchange scholar when this dissertation began. He and Dr. Wang Mei scored all protocols and translated all

protocols used in establishing reliability statistics. Wang Mei was a Chinese physician and a graduate student in the University of Tennessee's Clinical Psychology program. She also participated in the Rorschach research laboratory, and was also conducting a separate analysis of the normal Chinese and American subjects' protocols at this time. When asked, Dr. Li assured the author that the subjects in the Chinese schizophrenic group were "normal" schizophrenics, in the sense that nothing political earned them their diagnoses (1992). Indeed, he maintained that political influences had no impact on the diagnoses of the patients or on his use of the data.

The next group included twenty-three adult male and 24 adult female paranoid schizophrenics in the United States (Zitlin, 1988). Diagnoses of these subjects were based on DSM-III criteria (American Psychiatric Association, 1980), satisfied through examination of hospital chart diagnoses in conjunction with behavioral descriptions, evidence of persecutory or grandiose delusions, delusional jealousy, and hallucinations with persecutory or grandiose content. Subjects were rejected if there was evidence of affective components, suicidality, substance abuse, excessive agitation, retardation, organicity, or a history of electroshock therapy. These subjects were administered Rorschach's test by Mark Zitlin as cited above.

The final group included 50 normal adult subjects from the Burstein and Loucks normative samples (1989). These

healthy subjects included 25 males and 25 females who claimed to be free of psychiatric symptoms, were not in psychotherapy, were employed or raising families, and were engaged in volunteer services. Their mean age was 39.7 years, with a range of 18 to 60 years. The group had a mean number of years of education of 15.6, which ranged from 12 to 18 years.

Instruments

The Rorschach Inkblot Test was employed in this study. The test included the ten standard inkblots developed by Hermann Rorschach (1921/1964). The test protocols were scored using the Burstein and Loucks system (1989).

Procedures

Each American subject was given the Rorschach Inkblot Test according to the standardized procedure detailed in Rorschach's Test: Scoring and Interpretation (Burstein and Loucks, 1989). The instructions read: "I'm going to show you ten cards, each containing a picture of an inkblot. I'll give them to you one at a time. I'll ask you to look at each card and tell me what it looks like. Spend as much time as you like on each card but be sure to tell me everything that occurs to you" (p. 18). The examiner wrote down verbatim what the subject said during this "free association" phase.

Afterwards, the examiner again gave the blots to the subject one after the other, with these instructions: "Okay. Now that we're done, I'd like to go back over the cards with you to make sure I got your responses straight. Let's see. The first thing you saw on this card was [verbatim response]" (p. 19). With this introduction began the "inquiry" phase of the test. During this phase the examiner inquired of the subject in a non-leading fashion what it was about the blot that made for each of his or her particular perceptions. These elaborations were also written down verbatim by the examiner. Chinese subjects were administered the Rorschach according to the Exner system method. The Exner method of administration is essentially the same as the Burstein and Loucks method. Subjects are told that the stimuli are "a series of inkblots that I'll show you and I want you to tell me what they look like to you" (Exner, 1985, p. 2). Then, after handing the subject the first card, "the examiner says, 'what might this be,' and nothing else" (ibid, p. 3).

The protocols procured by the above procedure made up the raw data from which the indices under study were derived. Each response of each protocol was scored using the system developed by Burstein and Loucks (1989), and the consequent sequence of scores for each protocol was analyzed in order to arrive at a summary of scores that included the indices of interest.

In the cases of the Chinese Rorschach protocols, each was independently scored by Drs. Li Shenggang and Wang Mei. Then the two scoring protocols for each record were reconciled by the author working with both of the Chinese translators. All scoring discrepancies were reconciled by translation, inquiry of the translators, and retranslation until agreement was reached on the proper score.

Analyses

Ten variables were examined in this study. Planned analyses included ANOVA's for each variable in a 2 X 2 format (Culture X Mental Status), and a $p < .05$ was established as the level for rejecting null hypotheses. This method was chosen in order to examine the interaction and main effects between Culture and Mental Status.

CHAPTER V

RESULTS

Table 1 includes the mean raw scores and standard deviations for each variable, by subject group. Table 2 contains the mean proportions for Perceptual-Cognitive variables that were used in the ANOVA. Table 3 contains the results of the ANOVA tests for Rorschach ratio variables. Figure 1 contains the interaction diagrams for ratio variables.

F%. For F% there were no significant interactions between Culture and Mental Status ($F=1.54$, $p=.22$), and no main effect for Culture ($F=2.97$, $p=.087$) or Mental Status ($F=3.05$, $p=.082$). Thus, the hypothesis that F% would be higher for Chinese than for American subjects was not supported, the hypothesis that normal and schizophrenic subjects would not differ on F% was accepted.

Afr. The hypothesis that Afr would be lower for Chinese than for American subjects was not supported. There were no significant interactions between Culture and Mental Status ($F=1.48$, $p=.23$), and no main effect for Culture ($F=0.4$, $p=.53$). There was a significant main effect for Mental Status, in that schizophrenic subjects were lower in Afr than normal subjects ($p<.0001$). So, the hypothesis that schizophrenic subjects would not significantly differ on Afr from

Table 1. Mean raw scores and standard deviations, by variable
⁺
and subject group.

	CN		CS		AN		AS	
	X	(sd)	X	(sd)	X	(sd)	X	(sd)
R	19.89	(7.47)	16.15	(7.49)	24.42	(7.40)	17.82	(7.83)
F%	49.93	(18.59)	48.37	(22.12)	48.40	(13.56)	40.06	(21.92)
Afr	62.94	(25.17)	52.39	(21.71)	68.37	(24.09)	50.06	(18.17)
F+%	77.38	(16.00)	73.62	(23.51)	76.81	(13.30)	61.47	(26.82)
B+%	76.12	(16.18)	65.61	(26.22)	80.92	(13.41)	54.79	(25.36)
CR	.59	(.97)	.87	(1.14)	.74	(1.10)	3.69	(3.44)
PT	.02	(.14)	.34	(.78)	.12	(.39)	2.33	(2.34)
VP	.00	(.00)	.08	(.33)	.10	(.30)	1.42	(2.25)
(VP)	.21	(.57)	.21	(.50)	.28	(.67)	2.07	(2.18)
PSD	.06	(.23)	.09	(.35)	.08	(.27)	.98	(1.52)
LD	.06	(.23)	.15	(.97)	.00	(.00)	.62	(1.30)

⁺
Contributing cell means are identified using A=American,
C=Chinese, N=Normal, and S=Schizophrenic.

Table 2. Summary table of mean proportions of Perceptual-
+
Cognitive variables, by subject group.

	CN	CS	AN	AS
CR	0.029	0.052	0.029	0.204
PT	0.001	0.021	0.005	0.135
VP	0.000	0.004	0.004	0.086
(VP)	0.009	0.011	0.011	0.112
PSD	0.003	0.004	0.002	0.049
LD	0.004	0.010	0.000	0.038

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Contributing cell means are identified using A=American,
C=Chinese, N=Normal, and S=Schizophrenic.

Table 3. ANOVA results for Rorschach Ratio variables.

Source	SS	MS	df	F	p=
<u>F%</u>					
Culture (C)	1107.81	1107.81	1	2.97	.087
Mental status (M)	1138.85	1138.85	1	3.05	.082
C x M	575.25	575.25	1	1.54	.22
Error	73546.77	373.33	197		
<u>Afr</u>					
Culture (C)	206.40	206.40	1	.40	.53
Mental status (M)	10137.04	10137.04	1	19.89	.0001 ***
C x M	753.22	753.22	1	1.48	.23
Error	100420.22	509.75	197		
<u>F+%</u>					
Culture (C)	1579.49	1579.49	1	3.81	.052 **
Mental status (M)	4104.47	4104.47	1	9.91	.0019 *
C x M	1640.91	1640.91	1	3.96	.048
Error	79953.25	414.27	193		
<u>B+%</u>					
Culture (C)	270.48	270.48	1	.62	.43
Mental status (M)	16040.06	16040.06	1	36.55	.0001 ***
C x M	3053.91	3053.91	1	6.96	.009 *
Error	86464.39	438.91	197		

* p=.05 ** p=.005 *** p=.0001

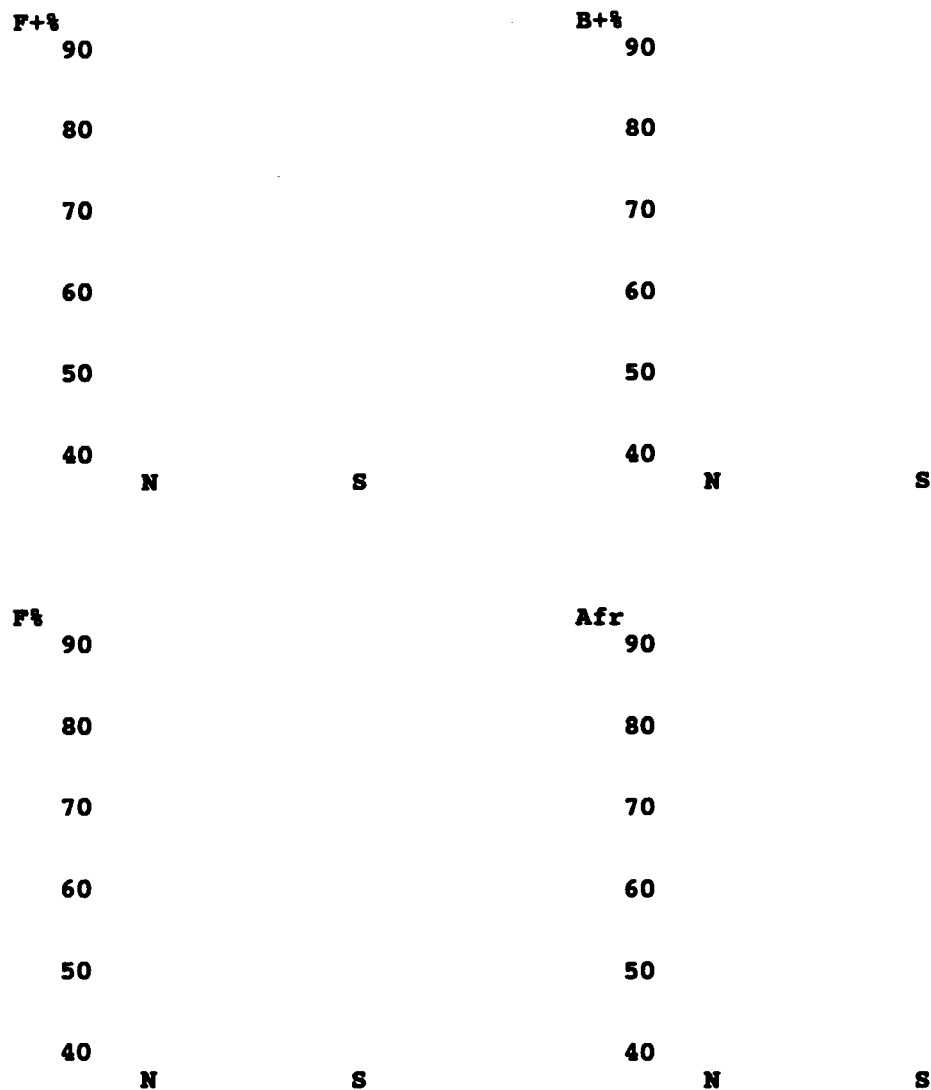


Figure 1. Graphs of interactions of F^+ , B^+ , F , and Afr .

normal subjects was rejected.

F+%. The hypothesis that F+% would be lower for Chinese compared to Americans was not supported. The mean F+% score for the Chinese subjects was not significantly higher than that of the American subjects ($F=3.81$, $p=.052$). The hypothesis that schizophrenic subjects would score below Normal subjects on F+% was confirmed ($F=9.91$, $p=.0019$). More importantly, Culture and Mental Status interacted significantly with an F of 3.96, $p=.048$, indicating that the effect of psychopathology was uneven for the different cultures, or vice versa, that the effects of culture were uneven for the different levels of Mental Status. Comparing mean frequencies of the groups with post-hoc analyses of cell interactions (Table 4) revealed that American schizophrenics scored 15 percentage points lower than American normal subjects ($p=.0004$), but Chinese schizophrenics scored only 4 points lower than the Chinese normal subjects ($p=.35$). The prediction that American schizophrenic subjects would score lower on this variable than normal American subjects was confirmed. However, the hypothesis that Chinese schizophrenics would give a lower mean F+% compared to normal Chinese subjects was not supported. There was a trend where the American schizophrenic subjects were significantly lower than the American normal subjects, the Chinese normal subjects ($p=.0002$), and the Chinese schizophrenics ($p=.004$).

B+%. The hypothesis that B+% would be significantly

+

Table 4. Post-hoc cell mean interaction analyses.

	CNxAN	CNxCS	CNxAS	CSxAS	CSxAN	ANxAS
F+%	.8889	.3460	.0002	.0043	.4277	.0004
B+%	.2464	.0106	.0001	.0116	.0003	.0001
CR	.9851	.2213	.0001	.0001	.2211	.0001
PT	.7888	.1269	.0001	.0001	.2156	.0001
VP	.7212	.7424	.0001	.0001	.9737	.0001
(VP)	.8505	.8331	.0001	.0001	.9847	.0001
PSD	.9187	.9329	.0001	.0001	.8532	.0001
LD	.6738	.5875	.0016	.0082	.3397	.0005

* ** ***
 p=.05 p=.005 p=.0001

+

Contributing cell means are identified using A=American, C=Chinese, N=Normal, and S=Schizophrenic.

lower for Chinese subjects than for American subjects was not supported ($F=.62$, $p=.43$). While the two normal groups were not significantly different, the Chinese schizophrenic subjects actually had a B+% that was significantly higher than the American schizophrenics ($p=.012$). There was a significant main effect for Mental Status ($F=36.55$, $p=.0001$), supporting the hypothesis that schizophrenic subjects would produce a lower mean B+% than normal subjects. However, Culture and Mental Status interacted significantly with an F of 6.96, $p=.009$. The results revealed that the relationship between psychopathology and culture was different for the American and Chinese samples. The American schizophrenic group scored 26 percentage points lower than the American normal group ($p=.0001$), while the Chinese schizophrenic group scored only 10 points lower than the Chinese normal group ($p=.011$). Despite the difference in the magnitude of the effect both comparisons were significant, so the prediction that schizophrenic subjects would score lower on B+% than normal subjects was confirmed in both cultures. In fact, each of the schizophrenic groups was statistically lower than both of the normal groups.

Contradiction of Reality (CR). Table 5 contains the ANOVA results for the Perceptual-Cognitive variables, and Figure 2 graphically shows the interaction effects for them. In CR, Culture and Mental Status interacted significantly with an F of 30.58, $p<.0001$. The results revealed that the effect of psychopathology was uneven for the different cultures.

Table 5. ANOVA results for Perceptual-Cognitive variables.

Source	SS	MS	df	F	p=
CR					
Culture (C)	0.2510	0.2510	1	26.75	.0001 ***
Mental status (M)	0.4487	0.4487	1	47.83	.0001 ***
C x M	0.2869	0.2869	1	30.58	.0001 ***
Error	1.8482	0.0094	197		
PT					
Culture (C)	0.1522	0.1522	1	33.94	.0001 ***
Mental status (M)	0.2591	0.2591	1	57.77	.0001 ***
C x M	0.1513	0.1513	1	33.74	.0001 ***
Error	0.8836	0.0045	197		
VP					
Culture (C)	0.0847	0.0847	1	21.73	.0001 ***
Mental status (M)	0.0830	0.0830	1	21.30	.0001 ***
C x M	0.0755	0.0755	1	19.39	.0001 ***
Error	0.7676	0.0039	197		
(VP)					
Culture (C)	0.1199	0.1199	1	39.74	.0001 ***
Mental status (M)	0.1205	0.1205	1	39.96	.0001 ***
C x M	0.1228	0.1228	1	40.70	.0001 ***
Error	0.5941	0.0030	197		

* p=.05 ** p=.005 *** p=.0001

(continued)

Table 5. (cont.)

Source	SS	MS	df	F	p=
<u>PSD</u>					
Culture (C)	0.0219	0.0219	1	17.66	.0001 ***
Mental status (M)	0.0246	0.0246	1	19.82	.0001 ***
C x M	0.0261	0.0261	1	21.03	.0001 ***
Error	0.2446	0.0012	197		
<u>LD</u>					
Culture (C)	0.0060	0.0060	1	2.21	.14
Mental status (M)	0.0217	0.0217	1	8.05	.005 **
C x M	0.0132	0.0132	1	4.88	.028 *
Error	0.5313	0.0027	197		

* ** ***
 p=.05 p=.005 p=.0001

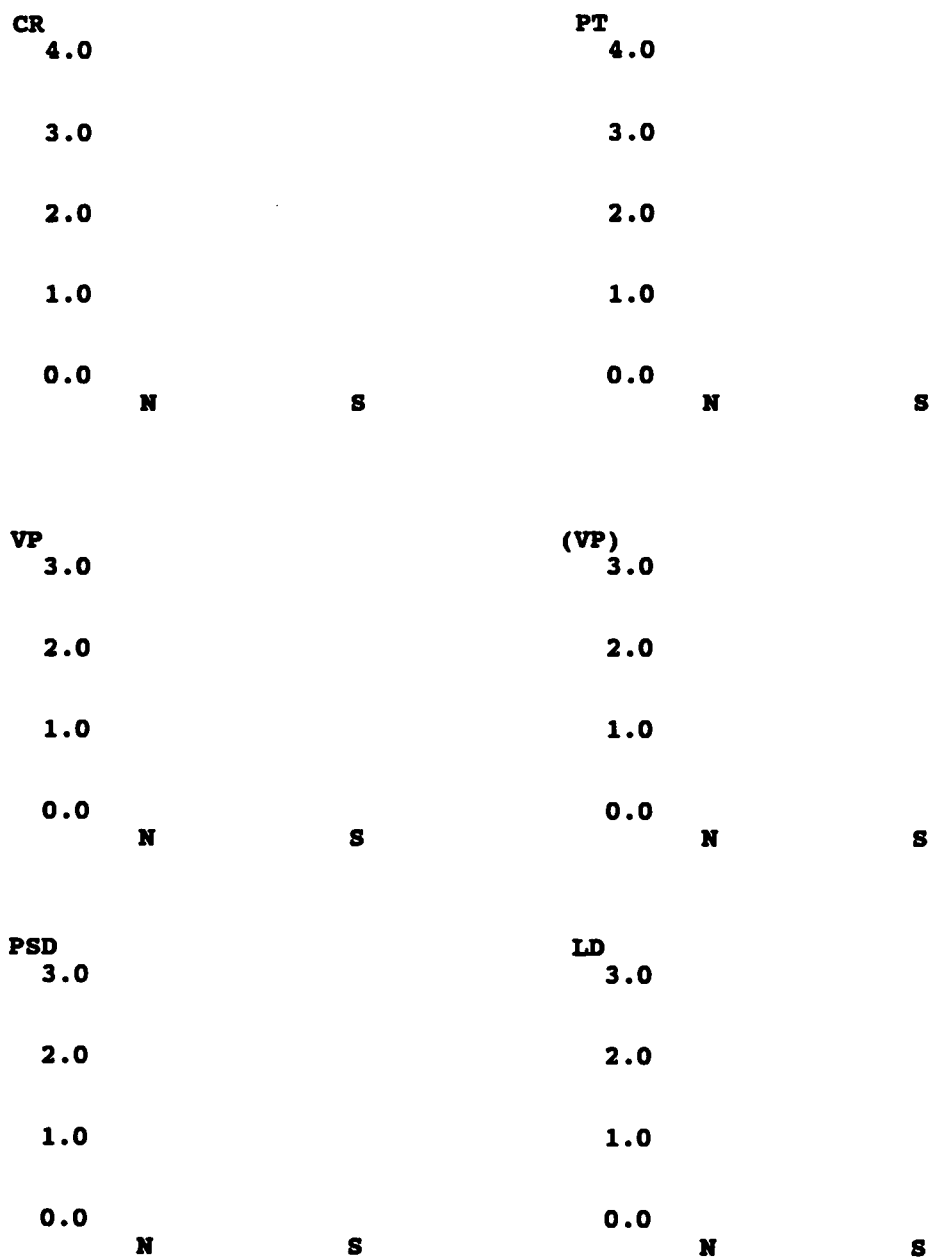


Figure 2. Graphs of interactions of Perceptual-Cognitive variables.

American schizophrenics gave significantly more CR scores than American normal subjects ($p=.0001$), while both Chinese groups had low and insignificantly different scores ($p=.22$). Thus the hypothesis that American schizophrenic subjects would give higher mean CR scores than normal American subjects was confirmed. The hypothesis that Chinese schizophrenic subjects would score significantly higher than Chinese normal subjects was not supported. The hypothesis that normal Chinese subjects would not differ from normal American subjects was not rejected ($p=.99$). By contrast, the hypothesis that Chinese and American schizophrenics would not differ from each other on this index was not supported ($p=.0001$). American schizophrenics gave significantly higher scores than each of the other three subject groups ($p<.0001$), but none of the other groups differed significantly among themselves.

Predicate Thinking (PT). In PT scores there was a significant interaction effect between Culture and Mental Status ($F=33.74$, $p<.0001$). The results revealed that the interaction of culture and psychopathology was different for the different cultures. Schizophrenia seemed to raise the PT from 0.12 to 2.33 in the Americans ($p=.0001$), but only from 0.02 to 0.34 in the Chinese ($p=.13$). Thus the hypothesis that American schizophrenic subjects would give higher mean PT scores than normal American subjects was confirmed. The hypothesis that Chinese schizophrenic subjects would score significantly higher than Chinese normal subjects was not supported. The hypothesis that normal Chinese subjects would not differ from

normal American subjects was confirmed ($p=.79$). By contrast, the hypothesis that Chinese and American schizophrenics would not differ from each other on this index was not supported ($p=.0001$). Finally, the American schizophrenic subjects gave higher PT scores than Chinese normal subjects ($p=.0001$).

Verbal Peculiarity (VP). On VP there was a significant interaction between Culture and Mental Status, with an $F=19.39$, $p<.0001$. Scanning the cell mean interactions revealed that the American schizophrenic subjects again gave significantly higher scores on this variable than each of the other three subject groups ($p<.0001$), and the other groups did not significantly differ among themselves. Thus, the hypothesis that American schizophrenic subjects would give higher VP scores than normal American subjects was confirmed. However, the hypothesis that the two schizophrenic subject groups would not differ on this variable was rejected. Moreover, the Chinese schizophrenic subjects had scores that were not significantly different than Chinese normal subjects ($p=.74$), so the hypothesis that these groups would definitely differ was not confirmed. Also, the hypothesis that normal American subjects would not differ from normal Chinese subjects was confirmed ($p=.72$).

Mild Verbal Peculiarity [(VP)]. The results for Mild Verbal Peculiarity showed that there was a significant interaction effect for this variable ($F=40.70$, $p<.0001$). Examination of the cell mean interactions revealed that American schizophrenic subjects again gave significantly

higher scores on this variable than any of the other three subject groups ($p < .0001$ in all cases), and the other three groups differed insignificantly among themselves. Thus, the hypothesis that normal American subjects would score significantly lower on (VP) than American schizophrenic subjects was confirmed. However, the hypothesis that schizophrenics of the two different cultures would not differ from each other on (VP) scores was not confirmed. Instead, American schizophrenics gave higher (VP) scores than Chinese schizophrenics. Also, the hypothesis that normal Chinese subjects would score significantly lower on this variable compared to Chinese schizophrenic subjects was not confirmed, since their means were equal. Finally, the prediction that normal Chinese would not differ in their (VP) scores compared to normal American subjects was confirmed ($p = .85$).

Perceptual Stabilization Defect (PSD). With regard to the PSD variable, there was also a significant interaction effect between Culture and Mental Health ($F = 21.03$, $p < .0001$). Scrutiny of the interactions among the cell means revealed that, again, the American schizophrenic subjects gave significantly higher scores on this variable than any of the other three groups ($p < .0001$), and the other groups did not statistically differ among themselves. Thus, the hypothesis that American schizophrenic subjects would yield a higher mean score on this variable compared to normal American subjects was confirmed. However, the hypothesis that a similar finding would occur between the two Chinese groups was not supported,

as this comparison gave a $p=.93$. Also, the expectation that normal Chinese and normal American subjects would not differ on this variable was confirmed ($p=.92$). However, the hypothesis that schizophrenic Chinese and American subjects would not differ on this variable was not confirmed. Again, the American schizophrenic subjects were significantly higher than the Chinese schizophrenic subjects.

Loss of Distance (LD). On LD there was a significant interaction between Culture and Mental Status, with an $F=4.88$, $p=.028$. Looking at the cell mean interactions revealed that the American schizophrenic subjects gave scores on this variable that were significantly higher than both the American normal subjects ($p=.0005$) and the Chinese normal subjects ($p=.0016$). Thus the hypothesis that American schizophrenic subjects would score higher on this index than American normal subjects was confirmed. However, the parallel hypothesis that Chinese schizophrenic subjects would score significantly higher than Chinese normal subjects was not confirmed ($p=.59$). The hypothesis that Chinese normal subjects would not differ from American normal subjects was confirmed ($p=.67$). However, the hypothesis that Chinese schizophrenics would not differ from their American counterparts was disconfirmed ($p=.0082$).

CHAPTER VI

DISCUSSION

The basic thrust of this study was to explore similarities and differences between Chinese and American schizophrenics as revealed in the Burstein and Loucks Rorschach indices. The cultural distance between Chinese and Americans is considerable, potentially affecting many (if not most) areas of psychology, and these differences invite scientific comparison. The literature maintains that schizophrenia will remain constant in essence across cultures, while simultaneously having its expression influenced by cultural differences (WHO, 1973, 1978). The literature also indicates that schizophrenics will display certain pathological symptoms such as poor reality testing (Spitzer, Endicott, and Robins, 1975; American Psychiatric Association, 1987), thought disorder (Andreasen, Hoffman, and Grove, 1985; Harrow and Quinlin, 1985; Marengo and Harrow, 1988), and problems maintaining appropriate boundaries among aspects of the self and between the self and the outside world (Blatt, Brenneis, Schimek, and Glick, 1976; Blatt and Ritzler, 1974; Blatt and Wild, 1976; Blatt, Wild, and Ritzler, 1975; Quinlin and Harrow 1974; and Quinlin, Harrow, Tucker, and Carlson, 1972). One of the concerns in using the Rorschach cross-culturally is whether it can be used to diagnose schizophrenia validly, that is,

excluding purely cultural effects. Ordinarily, the clinician considers the possibility of schizophrenia being expressed in the Rorschach by examining the F% and B% to estimate reality testing, and the Perceptual-Cognitive indices to assay for pathological thought processes. In addition, F% and Afr provide information on the subject's tendency to modulate objectivity and cognitive responsiveness to emotional stimuli. They are expected to be pathologically extreme in schizophrenics, since schizophrenics are described as having difficulty with such modulation. The statistical findings afforded here comment interestingly on the way these concerns may be reflected by the Rorschach Inkblot Test. At the same time the results are curious because they violated some significant expectations about how the groups would perform at the task.

Surprisingly, there were no statistically significant interaction or main effects in the ANOVA results for the F% data. This suggests that subjects will approach the Rorschach with the same level of pure objectivity regardless of their cultural or mental health status. One might interpret the statistics to mean that schizophrenics of these two cultures could not be readily distinguished from normal people based on this index. However, clinically both groups of normal subjects and the schizophrenic Chinese subjects scored nearly equally, while the American schizophrenics were by inspection lower on F% than the other groups. Thus, there appears to be a difference between the clinical and statistical usefulness

of the index in this context. That is, it does not appear possible from simple inspection of the relevant cell means to practicably separate Chinese schizophrenic and normal subjects using $F\%$. However, the difference between American normal and schizophrenic subjects seems clinically apparent, despite the lack of statistical significance. One conclusion may be that American schizophrenics have difficulty maintaining a normal level of objectivity, while Chinese schizophrenics do not. This finding is inconsistent with Mason, et.al (1985), who felt that the schizophrenic retreats into denotative simplicity in order to create distance from the confusion of ambiguity. In the results presented here neither schizophrenic group conformed to this description, since neither group showed a higher $F\%$ when compared to normal subjects.

A related question is why the Chinese schizophrenics did so well on $F\%$? It is important to consider alternative explanations for how they remained as "objective" as normal people, in contrast to other schizophrenics. Perhaps the Chinese tendency to emphasize the denotative and formal aspects of public experience is so basic that the cognitive disarray of schizophrenia does not necessarily disrupt it. One may even conjecture that among the physical differences distinguishing the two cultures may be a neurological or perceptual one that makes the Chinese less vulnerable to having their objectivity compromised by schizophrenia. These possibilities should be examined in future research.

An alternative consideration goes back to the problem of language and translation. We found earlier that Cook (1942) pointed to an inflated F% in cross-cultural Rorschach protocols because of language problems in the inquiry phase of the test administration. That is, the examiner's limited familiarity with the subjects' language narrowed his or her capacity to recognize and therefore inquire into possible references to cognitive processes other than the common use of form. A similar effect with an inflated F% in the foreign sample was found in this research, suggesting that some analogous problem may exist here. However, if this effect took place, it must have occurred at the stage of translating the protocols in order to score them. Yet this is unlikely, since the translation was made by two Mandarin-speaking native Chinese, one of whom administered the original Rorschachs.

A more probable explanation of the high F% in the Chinese schizophrenic subjects has to do with a limited inquiry during the administration of the Rorschachs. That is, Dr. Li Shenggang did not learn the Burstein and Loucks scoring system until after he administered the Rorschachs to Chinese subjects of both groups. Without knowledge of the relevant scoring possibilities in this system, he was unable to inquire of each subject to ascertain their contributions to those categories. This probably resulted in an inflated F%, since formal justifications are the easiest and most common ones to give. If this is correct, it would suggest that Rorschachs given to

Chinese by a pretrained administrator would probably result in lower F% levels than found here.

In contrast to F%, the Afr scores showed a significant main effect for mental health status. Schizophrenics, as a rule, scored significantly lower than normal subjects on Affective Ratio, regardless of cultural origin. Moreover, inspection of the cell means revealed that this effect was clinically consistent in both cultures. In fact, this was the only variable where the two schizophrenic groups' scores were proportionally close at all. On the other hand, there was no main effect for culture. Thus, the prediction that Chinese would be less cognitively responsive to affective stimuli than Americans, as measured by the Affective Ratio, was not confirmed. This suggests that Chinese do not differ from Americans in their cognitive involvement with emotional provocation, regardless of their mental status. Thus, the Chinese cultural proscription against affective displays does not necessarily lower their internal responsiveness to this stimuli. This suggests that schizophrenics in both China and the United States will be uniformly less cognitively aroused by affective stimulation compared to normal people, as shown by the Rorschach Inkblot Test. This is an important outcome, for it provides a variable for distinguishing normal from abnormal subjects even within a mix of Chinese and Americans, since there was no effect for culture in this analysis.

The above finding also underscores the more general importance of including the affective component of schizo-

phrenia in research. There was a disappointingly small amount of literature available on schizophrenia and the Affective Response. However, the findings here indicated that compared to normal subjects they showed a lower amount of cognitive processing of emotionally provocative stimuli.

The results on Affective Ratio also support a rethinking of the role of emotional stimuli in the two cultures. In the literature review, it became apparent that emotions are valued and treated very differently in the two societies. In America they are the medium of interpersonal valuation and are used strategically to elicit interpersonal responses, while in China people strive to prevent emotions from influencing their social behavior. In America, behavioral expression of emotion is allowed, but its effects and the contexts in which it is appropriate are carefully defined. In China, behavioral expression of emotion is generally discouraged, and it is accorded little interpersonal power when it does occur. In both cases, the effects of emotional stimulation must be behaviorally modulated, but for different reasons and in different ways. However, Chinese cultural idiosyncracies in the behavioral expression of emotion do not mean that they will differ in the extent to which emotional provocation produces cognitive activity. Indeed, the results on Affective Ratio indicated that subjects from both cultures showed about equal cognitive productivity in the face of affective stimuli, if their mental status was the same. It appears that Chinese respond internally to emotional inputs much as Americans do in

each of the mental status classes, but that cultural differences emerge in the behavioral expressions linked to the internal experiences.

Both F+% and B+% showed an interaction between culture and mental health. However, the interactions themselves were somewhat dissimilar. With F+%, the American schizophrenics contributed a mean significantly lower than the other three groups, which were themselves quite close together. The American schizophrenics behaved as they were expected to: they showed poor reality testing as measured by the Rorschach. That is, they did not use the blots' formal structures in the same way that normal subjects did. However, based on these results psychologists could not validly interpret problems with reality testing in Chinese schizophrenics compared to normal Chinese and American people. The Chinese schizophrenics displayed consensual reality testing at nearly the level of both normal groups. If this is so, then are they truly a schizophrenic group? This question will concern us again, later.

It appears that the Western tables upon which F+% is based are applicable to the Chinese population, since both Chinese groups were able to maintain an F+% level equal to Western normal subjects. This supports Burstein's (1991) position that American form level reference tables should be applicable to other cultures.

B+% also showed a significant interaction between mental health and cultural status. As in F+%, American

schizophrenics performed significantly more poorly on B+% than the other three subject-groups. However, unlike with F+%, Chinese schizophrenics could be confidently distinguished from both normal groups using B+%. Despite this fact, why American schizophrenic subjects still showed poorer subjective or connotationally-based reality testing when compared to Chinese schizophrenic subjects is unclear.

Additional conclusions are possible from these results. First, as with F+%, the Western norm tables used in this study appeared to be adequate for assessing consensual subjective reality testing in the Chinese population. That is, B+% scores of the Chinese normal subjects did not appear to be artificially inflated or deflated by using tables based in Western culture. Second, B+% was more useful than F+% in distinguishing schizophrenic subjects in the two different cultures, since it also differentiated Chinese schizophrenics from normal subjects of both cultures.

At this point a pattern is evident in the Chinese schizophrenic subjects' results for the four ratio variables. Caveats aside, they performed very similarly to normal subjects from both cultures when level of pure objectivity (F%) and objective reality testing (F+%) were at issue. By contrast, they performed much lower compared to both normal subject groups when cognitive responsiveness to affective stimuli (Afr) and subjective reality testing (B+%) were assessed. However, these effects did not occur with objective stimuli. It appears that Chinese schizophrenics responded to

internal subjective and ideational arousal with affective constriction and disorganization. Internal influences seem to be more unbalancing to the "sick" Chinese person than objective demands. This suggests that the inability to test reality when under the influence of inner emotions, fantasy, and connotations is what defines some basic aspect of the disturbance encompassing this Chinese schizophrenic sample. Perhaps a disorder under the influence of affects, implications, and other subjective factors is a more disturbing malady in a society where objectivity and emotional control are so important. Hermann Rorschach may have been correct when he hypothesized that cultural differences will be present in schizophrenic pathology, as measured by the Rorschach (Opler, 1967). These results are also consistent with Ho's view (1974) that schizophrenics' thought processes are confused under the influence of emotions. Similarly, this regular disruption of schizophrenics' control of emotions was found in both American and Japanese subjects (Suzuki, et.al, 1987).

However, Wilson and Young (1988) compared diagnoses by the Chinese classification system (1979) and the DSM-III (1980) and found that subjects were diagnosed differently. The Chinese system resembles the DSM-III and ICD-9 systems, using syndrome structures and similar terms such as 'schizophrenia,' but "applied more broadly or with a different emphasis than the same diagnosis in DSM-III" (Wilson and Young, 1988, p. 587). This "broad" style of categorization

is, as discussed before, very much a part of the Chinese language and thinking. Wilson and Young found that in marginal cases the Chinese tended to diagnose schizophrenia where the DSM-III system diagnosed affective disorders. This suggests that Chinese doctors may tend to include within the class 'schizophrenia' people with significant affective disturbances. This recalls the US/UK project, which found that Americans were diagnosing more schizophrenia, while the British were diagnosing more affective disorders. Even though the Chinese schizophrenics used here were diagnosed using the RDC system rather than the Chinese classification system, a previously learned tendency might still influence Dr. Li's and his colleagues' diagnoses. It may even be significant that Wilson and Young's study was also performed in Changsha, so that both sets of results were found in the same psychological community. Such a systematic bias could account for many of the results that were found here. In any case, why the Chinese schizophrenics showed better reality testing than American schizophrenics, this time in the subjective arena, is still unclear.

Examination of the interactions within each of the six perceptual-cognitive indices revealed a highly consistent pattern across these variables. For each one, the American schizophrenics had the high score among the four cell means. This was as predicted in all cases, indicating that the expected thinking problems were found in the American schizophrenic sample. By contrast, the other three groups rarely

ever gave evidence of thought disorder via the CR, PT, VP, (VP), PSD, and LD variables. One basic conclusion is that the American schizophrenics can be reliably divided from normal subjects using these six Perceptual-Cognitive variables. This is consistent with the literature on the Rorschach when testing Western schizophrenics. By contrast, the Chinese schizophrenic subjects are not distinguishable from the Oriental or American normal subjects on any of these indices.

The remarkably consistent results across the six Perceptual-Cognitive characteristics raised the idea that they may be considered as members of a single group. Certainly the variables acted as one, so that whatever was broadly tapped by them was given by the American schizophrenics but not the Chinese schizophrenics or any of the normal subjects. Moreover, their behavior in concert suggests the possibility that the absence of effects from Chinese schizophrenics in all six variables is caused by the same influence.

From one perspective, it has been argued that the degree of thought disorder is an index of the level of psychopathology (Harrow and Quinlin, 1977, 1985; Holzman Shenton, and Solovay, 1986; Johnston and Holzman, 1979; Jones, 1977). If that were the simple case, then these results would indicate that the Chinese schizophrenic subjects are far less disturbed than the American schizophrenic subjects. However, the findings do not really allow for any degrees of psychopathology: the Chinese schizophrenics simply did not show any Perceptual-Cognitive types of problems in their

Rorschachs. Either the thinking problems were not there, or they were not found with the procedure used here.

If there were no thinking problems in this population, then we need to again whether the Chinese abnormal population used here was truly a schizophrenic one. This is important since, for example, it may suggest that the subjects in this Chinese schizophrenic group may have been erroneously labelled. This possibility already received some support from Wilson and Young (1988) in the discussion comparing the groups' responses to objective versus subjective stimuli.

It may also be asked, if we assume that there were no Perceptual-Cognitive thinking problems in these Chinese schizophrenics to be found, whether Chinese schizophrenics necessarily manifest thought disorder. That is, one may consider that the Chinese schizophrenic group used here was truly schizophrenic, but that they showed no thought disorder as determined by these scores. This would suggest that Chinese schizophrenics may not suffer from such thinking problems. One result of this would be that a cross-cultural definition of schizophrenia could not include thinking problems, as assessed by these Perceptual-Cognitive variables.

Perhaps the Chinese simply do not manifest thought disorder in the same way Americans do. That is, assume that they do manifest thought disorder in some way, and consider whether there may be cultural differences that preform the way that thought disorder can be experienced and expressed in behavior. From a similar perspective, perhaps the Chinese

schizophrenics do have thought disorders, but the Rorschach is not cross-culturally suited to expose them. These possibilities increase in magnitude when we consider that differences between the English and Mandarin languages obscure similarities in thought pathology. However, this time the issue is not the experimenter's limited knowledge, but the effects of differences in language structure. An example was presented to this author when working with Dr. Li Shenggang to translate and score the Rorschach protocols used here. One percept was translated from Chinese to English as "a fish with mustaches." In inquiring for a possible reality contradiction, it transpired that there was a single generic word that incorporated mustaches, beards, feathers, barbels, and other natural extensions that cover or adorn the head. This suggested that the comparison of linguistic structures can be compromised by use of different categorical hierarchies. This can have specific effects in diminishing scores on some of the Burstein and Loucks measures of thought pathology. For example, metonymic distortions scored as Verbal Peculiarities are based in the subject's denotative confusion, which leads to word-choices that are conceptually relevant but logically oblique. This very obliqueness is possible, at least in part, because of the logically linear quality of the English language. With the Chinese the absence of logical linearity and the inclusiveness of many of their linguistic categories together make possible the absence or camouflaging of metonymic distortions. Such problems with language influence the

Contradiction of Reality score in a similar fashion. It is important to realize, however, that it is not clear the exact effects of language differences. That is, we still cannot determine whether language differences mean that Chinese do not experience thought disorder like Americans do, or whether they experience thought disorder more or less like Americans but express it differently.

In light of some of these considerations, it was fortunate that Dr. Li Shenggang, who administered the Chinese Rorschachs, and Dr. Wang Mei were available for the translation and scoring of the protocols. This reduced some of the problems found in many cross-cultural studies. They are both well-educated native Mandarin-speaking Chinese, so their familiarity with the language is high. Furthermore, both were trained in the Burstein and Loucks scoring system, so they could respond to particular scoring issues within any protocol. Since the idiogrammatic notation was done in Dr. Li's hand, problems of translating his particular writing style could be resolved by his direct inspection. Also, he could recall the actual administration in order to make better informed decisions about a subject's verbal behavior.

Considering some of the discussion above, there appear to be three possible explanations for these Perceptual-Cognitive data. First, it may be that the uninformed inquiry during the Rorschach administration compromised the possibility of those variables being scored. That is, the same problem that may have inflated the F% may have deflated these scores. Second,

differences in the structures or other aspects of language may exist that prevent the scoring of these variables for Chinese. Linguistic differences may mean that thought disorder is experienced, expressed, and hence available for diagnostic assessment in different ways. One aspect of this is that the Rorschach scoring rules for Perceptual-Cognitive variables may not apply to the Chinese language because of different categorical hierarchies and views of causality. Third, it may be that the Chinese schizophrenics were not true schizophrenics. Any of these three possibilities could conceivably exert the required influence over the six Perceptual-Cognitive variables. Note also that the three possibilities are not mutually exclusive, so that both an inquiry failure and a misdiagnosis could combine to lower the Perceptual-Cognitive scores. Similarly, language differences may limit the times these variables are scored in China compared to the United States, but then a failure of inquiry could lower the scoring incidence even further.

Although the similar performances of the groups across these variables supported the idea that there was a uniform influence causing the similarities, it does not help us decide which one or more of the three influences is real. On intuition, it seems likely that the limitations on the inquiry affected the results. This probably raised the F% and lowered the Perceptual-Cognitive scores in both Chinese groups. It also seems likely that logical and categorical language differences lowered the Perceptual-Cognitive scores, even

though the degree of the influence is by no means clear. It would be informative to investigate the source and degree of influence of such linguistic differences. The diagnostic status of the Chinese schizophrenic group also remains unclear in the absence of records with diagnostic and demographic data.

Note that the Chinese schizophrenics' performance on all the variables in this study raises questions about the Rorschach's ability to distinguish this syndrome from psychotic depression in China. That is, psychotic depression ordinarily can manifest on the Rorschach as problems in reality testing in affective areas, but without the thought disorder and poor objective reality testing of the schizophrenic. Since that is just how this sample of Chinese schizophrenics behaved, it suggests possible problems in differential diagnosis using the Rorschach.

Another concern with methodology in this research had to do with subjects' possibly differing motivations and reactions to the test. As Abel (1948) pointed out, mustering subjects has sometimes involved couching the task in terms of a game or other diversion. In the research presented here, the normal Chinese subjects were enticed to participate with the reward of a break from work. The normal American subjects were volunteers whose reward was participation in the research and learning what the results were. These methods may be hypothesized to have produced very different mental sets toward the procedure. However, the very similar results for

all variables between the Chinese and American normal subjects suggests that presumed effects of differences in motivational sets did not occur.

Similarly, considerable evidence and thought has already accumulated that differences in demographic variables such as age and educational level can confound Rorschach performance effects. Rorschach himself maintained that the intellectual indicators in his test would reveal different intellectual development at different ages (1964). Ames emphasized that Rorschach behavior was like developmental age behavior (Ames, Metraux, Rodell, and Walker, 1973). Potkay (1971) reviewed how controlling for age can improve agreement between diagnoses and relevant Rorschach indicators of pathology. Age and education can also interact, so that education needs to be controlled for when a clinician is, say, assessing geriatric brain damage (Baker, 1956).

Moreover, the confounding effects of age and educational level can extend to Rorschach outcomes otherwise attributed to cultural dissimilarities (Amir, Kohen-Raz, and Rabinowitz, 1966). The Chinese and American subject groups used here in this study showed apparent significant interactions between Culture and Mental Status on a number of the Rorschach variables examined. Yet, they also have different mean ages and levels of educational attainment. The normal American subjects had an average age of 40, while the normal Chinese averaged 25.5 years of age. Similarly, the normal American subjects had about 15 years of education, while the normal

Chinese subjects had a mean of less than 10 years of schooling. So, on the average, the normal American subjects were about 15 years older and had about 5 more years of education than the normal Chinese subjects. These differences require examination.

The findings by Amir, et.al. (1966) indicated that education and cultural differences had an interacting effect on the frequency of responses, detail responses, movement responses, animal responses, and card rejections. However, the present study employed different variables, so that direct comparisons between the two studies was not possible. Instead, post hoc predictions for the variables gleaned from the literature about the expected effects of age and education differences between the two normal groups will be considered. Insufficient information is available to compare the two schizophrenic groups of subjects on these two demographic variables.

Since greater life experience comes with greater age and educational attainment, and since more experience increases the fund of memory on which the subject draws to form Rorschach responses, it might be presumed that the capacity to formulate pure-form and non-pure-form responses increases with age, education, and the associated cognitive development. The literature actually indicates that F% is generally higher in children, and it decreases and stabilizes in early adulthood (Ames, et. al., 1952; 1971; Exner, 1986). In the elderly, F% further decreases in the senile, but remains stable in normal

people (Ames, et. al., 1973). However, the disposition to offer pure-form or non-pure-form responses is more likely to depend on other factors such as the parenting styles of the caretakers. In any case, there were no significant differences between the normal Chinese and American subjects on F%. Thus, it does not appear that age and education differences influenced this score.

Analogously, higher age and educational attainment may be expected to increase a person's cognitive capacity to process affectively stimulated cognition as well as to control the behavioral expression that might follow from it. However, it is not clear that these two factors will influence the direction of such moderation as an expression of the subject's receptivity to emotional stimuli. This would depend on the person's particular experiences with emotional stimuli. Exner (1986) found that the Afr dropped from 1.07 to .81 between the ages of five and eight, then remained stable until about age twelve, and then dropped again to about .72 around age 16. In any case, there was no difference in the research here between Chinese and American normal subjects on this index. Thus, age and education differences do not seem to have differentially influenced the Afr scores of the two normal groups.

Similarly, it appears logical to expect that a greater age and educational attainment could correlate positively with more success with consensual reality testing. This expectation of children's development is supported by the literature. Bohm (1958) found that F+% was lower in children

compared to adults. Levitt and Truuma (1972) found that F+% increased from about .60 to .80 between the ages of five and sixteen. Klopfer (1946) confirmed Rorschach's prediction that advanced age would correlate with deterioration in perceptual acuity. However, Ames, et. al. (1973) found that F+% increased in the normal elderly, but decreased in the senile elderly. Thus, American normal subjects might be expected to have higher F+% and B+% than normal Chinese subjects if these factors were operating. However, the results here do not support this expectation. Instead, the normal Chinese and American subjects again had insignificantly different scores on these variables. Thus it cannot be easily argued that age and education differentially influenced these scores.

Finally, greater age and education may be expected to reduce the incidence of each of the six Perceptual-Cognitive variables in this study. That is, greater interpersonal and cognitive experience would be expected to provide feedback loops for learning the effects of such behaviors, which would improve a person's ability to limit such autistic and primary process cognition. Exner's findings support the expectation that these scores will appear more frequently in normal children than normal adults, and that these scores go down with development (1986). In fact, on five out of six Perceptual-Cognitive variables in this study there were no performance differences between Chinese and American normal subjects. Only on Extreme Verbal Peculiarity was there a significant difference between the two normal groups' means

($p=.02$). Even then, it was a weak statistical finding among the other cell mean comparisons. It was even less useful clinically since the difference between the means of 0.0 for the normal Chinese and 0.1 for the normal Americans is quite small. Thus, there does not appear to be many, if any, effects of age and education on the Perceptual-Cognitive variables.

These results must also be viewed in light of some diagnostic differences between the two pathological groups. The American group was made up of only paranoid schizophrenics, while the Chinese group was 41.5% paranoid schizophrenics and the remainder a mixture of subtypes. Despite a literature that does not fully support a reliable difference between paranoid and other schizophrenic disorders, the clinical differences are often clear enough. The DSM-III-R (1987) described the paranoid schizophrenics as differentiated by the prominence of persecutory, grandiose, or jealous delusions or hallucinations with related themes. The nonparanoid schizophrenics, by contrast, are described with prominent incoherence, looseness of associations, flat or inappropriate affect, or disorganization. Both are characterized by a lack of insight. Contrasting these symptoms against the Burstein and Loucks variables employed here, both diagnostic groups could be characterized by higher CR, PT, and LD, and lower F%, F+%, and B+%. So these variables could not distinguish them in any case. However, nonparanoid schizophrenics seem more likely to generate higher VP and PSD scores. Nevertheless, it

was still the paranoid sample used here that mainly contributed to these two scores, contradicting the results expected if the difference between paranoid and nonparanoid groups was significant. Buss and Lang (1965) and Harrow and Quinlin (1985) argued that paranoids will have superior cognitive performances compared to other schizophrenics. Quite the opposite is seen in comparing our two schizophrenic samples, for the pure paranoid group performed more pathologically on all the cognitive variables in the study when compared to the more mixed group. Similarly, Andreasen, et.al (1985) and Andreasen and Grove (1986) maintained that disorganized schizophrenics showed more poverty of speech content, illogical speech, and looseness of associations compared to paranoid schizophrenics. Again, both schizophrenic classes can show illogical and loose associations, so these traits cannot separate them. In addition, although poverty of speech content suggests that the nonparanoid group could have a lower response rate, the nonparanoid mean R of 16.2 is not significantly different from the paranoid mean R of 17.8. In conclusion, available information does not support the view that differences in diagnostic representation in the two schizophrenic groups employed here confounded the results.

Many of the complications in this study point to the more general concern with this study, which is the lack of available information on the Chinese populations, especially the schizophrenic group. What was their actual symptomato-

logy? Understanding the peculiarity of the Chinese schizophrenic group's performance (too high on reality testing and too low on thought disorder) is hampered by limited knowledge about this population. Have they been misdiagnosed, or do Chinese schizophrenics have very different Rorschach expressions of psychopathology? Since this information was not available, it was impossible to definitely answer these questions.

Although the subjects in this study were not perfectly matched for diagnosis, age, education, socio-economic status, and probably other variables, the opportunity to study Rorschachs of subjects from the People's Republic of China should not be undervalued. Clearly, the two Chinese groups are samples of opportunity, brought as they were by Dr. Li Shenggang without their having been part of a specifically preformed research plan. However, several factors make such opportunities very rare, thus increasing their scientific value when they do appear. First, the number of Chinese mental health professionals using the Rorschach Inkblot Test in China appears to be extremely low. In a related vein, the social, cognitive, and somatic orientations of psychiatry and psychology in China reduce the likelihood of the Rorschach even being used in the first place. Also, the socio-political situation in China is one where research and information are more carefully monitored and controlled. This suggests that it may not be easy to gain access to psychological information about Chinese, especially when it is obtained using

psychological tools that are suspect. Regardless of the relative contributions of these and other influences, it is clear that the Chinese data represented a unique opportunity to do research in comparative psychology.

Overall, this research on the use of the Rorschach for explicating cross-cultural differences in schizophrenic psychopathology has proven both enlightening and problematic. The question of whether the Rorschach is a valid tool for conducting cross-cultural research received a generally positive answer. Certainly it was possible to appropriately administer and reliably score the test in the context of Chinese society. More importantly, the results of the test were meaningfully interpretable, both for the Chinese alone and in comparison to the Americans. Many of the possible problems encountered in this work, such as the confounds arising from different levels of intelligence in the groups and the lack of sufficient information about the Chinese groups, do not in principle invalidate the Rorschach as a cross-cultural tool. Rather, they suggest the need for more research with better controls in order to clarify their effects. However, it did seem probable that differences in language and cultural experience were affecting subjects' protocols. Some of these may even have prevented the identification of problems with thought disorder in the Chinese. However, such differences are part of what make individuals and cultures idiosyncratic, and are grist for the scientific mill. Again, replication with fuller inquiry is called for.

As long as employing the Rorschach Inkblot Test improves our knowledge about the import of inter- and intra-cultural variation, then its usefulness will continue.

Conclusions about the cross-cultural status of schizophrenia, specifically, are less clear but very provocative. Certainly the American schizophrenics behaved as expected, showing clear problems with reality testing, affective modulation, and thought disorder. However, the Chinese schizophrenics behaved quite differently by comparison. They showed a lower cognitive responsiveness to affective stimuli and problems in subjective reality testing, but very good objective reality testing and no thought disorder as measured by the Perceptual-Cognitive variables. Their high objective reality testing and low subjective reality testing seem explicable in terms of cultural differences in the role of emotions and social rules. However, the lack of perceptual-cognitive evidence for thought disorder in the Chinese schizophrenics is more problematic. It may have resulted because the Chinese language is not structured in such a way that such disorders can be as easily revealed via the Rorschach test. By extension, because of these cultural differences schizophrenia may be caused, experienced, and expressed in different ways in these two cultures. This may be part of the proposed 30% of etiological variance apparently accounted for by cultural factors (Bebbington and McGuffin, 1988). If true, then the Rorschach's effectiveness for assaying such problems is apparently compromised. On the other hand, the lack of

information on the Chinese schizophrenic sample prevented a definitive answer to this question and others related to it. Further research is clearly called for.

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