

# The Rorschach as a Neuropsychological Instrument: Historical Precedents and Future Use

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## **Abstract**

In 1988, the author completed a comprehensive review of the pre-Rorschach and Rorschach literature dealing with its use in evaluating organic brain dysfunctions. Monographs, journals articles, presented papers and oral history reports from 1890 to 1988 yielded over 6000 records; 4500 were within the scope of the investigation. Review and preliminary analysis of these 4500 studies narrowed the final review set to 600 Rorschach studies of varied neuropsychological populations worldwide. Much of this work came from the 1930s to 1950s, and much of it was criticized in the 1960s to 1980s, with the development of neuropsychology as a subspeciality while the Rorschach was devalued by its opponents. As part of the same 1988 study, leading neuropsychologists and leading Rorschach proponents were asked to predict the role of the Rorschach for neuropsychological needs of the twenty-first century. The last ten years of Rorschach literature shows that very little additional research on organic populations has taken place, although interest in such studies has frequently been expressed. The present paper includes a concise overview of past uses of the Rorschach with neuropsychological populations, including this decade, and summarizes the populations and the amassed Rorschach data on them. The paper identifies methodological strengths and weaknesses of the past studies, with relevance to future research. Suggestions for needed future investigations are offered, including those areas

identified by the experts' 1988 predictions of the role of the Rorschach as a neuropsychological instrument for the coming century.

## Introduction

The idea of using the Rorschach as a means of assessing behavioral and cognitive changes that accompany various neurological diseases dates back to Rorschach himself, who in early years thought his method might be used to detect epilepsy at early stages. Proof that we continue to wonder about the role of the Rorschach with neurological populations is evident in this symposium today.

The first neuropsychological Rorschach record to be published was part of the Psychodiagnostik (1921), as Rorschach included an illustrative record from a patient suffering from Korsakoff's Syndrome. However, the largest potential neuropsychological population in the early years of the method was epileptic; Rorschach and his colleagues had a great interest in this population. Unfortunately for them, but of great good fortune for the patients, the invention of the electroencephalograph in 1929 made a huge contribution to the diagnosis of epilepsy and the Rorschach method was not needed as a primary diagnostic tool. However, when Oberholzer (1931) published the first paper on the Rorschach record of epileptics, he used the data to identify organic signs similar to those Piotrowski later elaborated so succinctly.

The heaviest concentration of early neuropsychological work with the Rorschach occurred in the 1940s and 1950s, when the emphasis was on defining specific disease personalities, such as "the epileptic personality". Studies then focussed on three primary organic groups: epileptics, persons of limited intellect, and people who had undergone lobectomy or lobotomy. In more recent years of Rorschach neuropsychological research, the heaviest concentration of interest is occurring now, in the 1990s. Today the emphasis is on the cognitive and behavioral sequelae of brain injury and renewed exploration of perceptual skills.

## Rorschach Studies of Neuropsychological Populations: Types of Neuropsychological Populations Studied

<i>Population Type</i>	192 0s	193 0s	194 0s	195 0s	196 0s	197 0s	198 0s	199 0s	<i>Total</i> /
Unspecified "Neuropsychiatric"	0	0	1	0	1	0	0	3	5

Moderate-Severe Traumatic Brain Injury	0	1	8	10	3	8	3	4	37
Mild Traumatic Brain Injury, Concussion	0	1	5	5	1	4	1	2	19
Infectious Brain Disease	1	1	3	3	1	0	1	0	10
Anoxia	0	0	2	1	0	0	0	0	3
Brain Tumor	0	1	7	3	1	1	2	1	16
Cerebral Infarct	0	0	2	0	3	1	1	0	7
Vascular Dementia	0	1	0	0	0	2	0	0	3
Alzheimer-Type Dementia, Pick's, BSE	0	3	0	1	1	3	4	3	15
Parkinsons, Chorea	1	2	2	2	2	5	1	0	15
Multiple Sclerosis, Dystrophies, CP, Torticollis	0	0	6	5	0	1	2	2	16
Seizure Disorders, ECT, Tourette's	0	7	22	20	9	9	8	0	75
Chemical Abuse/ Dependency	1	0	10	8	13	9	8	4	53
Learning Disability, Minimal Brain Dysfunction	0	0	1	3	3	2	7	1	17
Mental Retardation, Developmental Delay, Autism	2	3	3	1	5	12	6	4	36
Sleep Disorder	0	0	0	0	0	0	0	2	2
Lobe-Specific Injuries, Experimental Lesions	0	4	11	17	3	3	1	1	40
Experimental Perceptual Conditions	0	0	0	0	0	0	0	3	3
Mis-Identified as Brain Damage	0	1	0	0	0	0	0	0	1
<i>Totals by Decade</i>	5	25	83	79	46	60	45	30	373

This paper will present a brief overview of the historical trend of nearly 400 Rorschach studies over eight decades, identifying neuropsychological populations that have been of interest to Rorschachers to date, the research questions they have asked and the strengths and weaknesses of their studies. After reviewing the past and looking at the present, it will be time to look to the future. In 1989 I conducted a predictive study asking experts in the Rorschach, in neuropsychology, and in psychohistory how neuropsychologists would be likely to use the Rorschach in the twenty-first century. Their answers were not only interesting, some of them were

correct. I will also share a brief glimpse of some of those ideas with you today and suggest some of the research questions I think we need to consider in the next decade.

## **Early history**

At the beginning of this century, psychiatric hospitals included many people who had neurological disorders. In addition to those who suffered from seizure disorders and mental retardation, there were also tumor patients, and survivors of traumatic brain injury. As a practicing psychiatrist, Rorschach and his contemporaries had many opportunities to include these populations in their studies.

In the 1920s there was a unitary concept of organicity with a dichotomy of patients: quite simply, those who were considered organic and those who were not. Most of the earliest Rorschach studies of neuropsychological populations either explored its effectiveness as a tool to diagnose organicity using a sign approach in analyzing the records of persons with known organic diagnoses, or they explored personality within the diagnosed organic groups. In the 1920s personality analysis was emphasized more than assessment of cognitive skills or deficits, as personality was believed to have a very important prognostic role in the disease state. From the 1920s well into the 1930s, a patient's personality was recognized as an important factor in acquiring organicity and in prognosis after a neurological disorder was diagnosed.

By the 1940s many practitioners believed certain personality types were predisposed to certain neurological dysfunctions. Thus, the "epileptic personality" of the 1940s was a precursor of the "Type A personality" widely recognized by professionals and the general public in later decades for its relationship to cardiovascular disorders. Although this was a rich field for potential research, the late 1930s and early 1940s also produced an abundance of another type of neuropsychological patient: those who had survived significant head trauma, from war. The growth of this population was also a significant factor in the development of applied clinical neuropsychology.

One more important research population was created with the use of psychosurgery as a popular treatment from 1936 to 1950; a period that overlapped with the peak of Rorschach popularity in the 1940s and 1950s. Lobotomies, lobectomies, and even hemispherectomies added impetus to cerebral localization studies. As the majority of psychosurgery patients were institutionalized for many years, longitudinal studies could also be designed. A number of neuropsychological Rorschach studies were devoted to these patients, and a very good review of them was published in the *Journal of Projective Techniques*. This article, written by Ross and Block (1950), reviewed nineteen published studies and four on-going investigations that utilized the Rorschach to study these unfortunate patients. Many of the primary attributes of frontal lobe injury, such as impulsivity and perseveration, were first described in these

studies, although they are not commonly cited, recognized, or even known by many of today's neuropsychologists.

By the beginning of the 1950s, there were three competing notions of the role of personality in illness: first was the continuing 1940s idea that certain personalities were predisposed to certain illnesses. A second position was that specific emotional conflicts led to specific physiological disturbances, much like Freud's theory that repressed sexual conflict led to conversion hysteria. The third position was that it was the cumulative stress level a person endured rather than specific conflicts that led to physiological malfunctioning, that the nature of the stress was less relevant than the amount of stress produced, an idea that led to some excellent work on a wide variety of stress related illnesses.

### **The crisis of the 1960s**

In the 1960s clinicians began to recognize the role of environmental as well as social factors in the development of disease and the idea of a disease personality reversed from a causative hypothesis to a reactive hypothesis. In other words, the "epileptic personality" was still recognized, but instead of being seen as a predisposition for epilepsy, it was seen as the individual's reaction to epilepsy. How much this contributed to a new trend is unclear, but it is clear that the most profound effect the 1960s had on how the Rorschach was used with neuropsychological populations was to move the emphasis away from personality and toward neuroscience. With increasingly sophisticated technologies, neurodiagnostic techniques began to expand exponentially, promoting research on very detailed cerebral mapping. This was also in part a response to the 1950s academic controversy over the reliability and validity - in essence the "scientific-ness" - of the Rorschach. Polarization among clinicians was common, with staunch advocates of the method pitted against equally staunch detractors, those who trained in the 1960s and later. Although the earliest neuropsychologists, such as Harrower, Benton, Diller, and even Reitan had been quite comfortable with the Rorschach as a research and clinical tool for use with neurological populations, the new neuropsychologists of the 1960s were not. In North America this group identified most strongly with experimentalists, anatomists, and neuroscientists. A high percentage of their work was devoted to the development of other, notably objective, tests to tap individual skills areas and the Rorschach was treated with disregard by many and even derision by some.

About half of the Rorschach studies on neuropsychological populations published in North America in the 1940s and 1950s had been produced by Europeans who had relocated during or after the war. Although a number of Americans had been trained to use the Rorschach, and many other types of Rorschach studies were produced, neuropsychological research with the Rorschach was sparse in North America in the

1960s. In Europe and other parts of the world the frequency of such studies remained relatively stable.

### **Rorschach Studies of Neuropsychological Populations: Publications by Continent**

<i>Continent Where Published</i>	1920 s	1930 s	1940 s	1950 s	1960 s	1970 s	1980 s	1990 s	<i>Total</i>
Europe	5	12	19*	19*	15	26	15	15	126
North America	0	11	62*	58*	27	25	20	12	215
Asia	0	0	0	0	2	8	6	2	18
South America	0	2	2	2	2	1	3	0	12
Africa	0	0	0	0	0	0	1	1	2
<i>Totals by Decade</i>	5	25	83	79	46	60	45	30	373

\*Approximately 50% of the North American publications in the 1940s and 1950s were written by Europeans who had emigrated to the United States and Canada during and after World War II.

The emphasis on neuroanatomy may have decreased Rorschach studies in North America, but it also had a positive effect, as it promoted personality and cognitive studies associated with specific portions of the brain. The confirmation of the "frontal lobe personality" was a very important concept for neuropsychologists and Rorschachers alike. For the first time, the relationship between localized brain injury and disease was unquestionably associated with highly specific emotional and behavioral sequellae as well as with specific cognitive changes.

### **The goals of research**

In the 1980s the overall rate of this area of Rorschach research declined with the single exception of differential diagnosis of brain damage, which was consistent with the primary goal of many neuropsychologists. In the 1990s, this type of diagnostic study has decreased and the emerging area of highest interest is in the exploration of perceptual skills. In the States we have a saying: "What goes around comes around"

and in neuropsychological studies the Rorschach is again being used as a perceptual measure as it was originally planned before the richness of the data for personality interpretation was recognized.

### **Rorschach Studies of Neuropsychological Populations: Stated and Apparent Research Goals**

<i>Research Goal</i>	192 0s	193 0s	194 0s	195 0s	196 0s	197 0s	198 0s	199 0s	<i>Total</i>
Differential Diagnosis of Brain Damage	3	10	32	22	26	27	25	2	147
Cognitive Studies of Organic Populations	0	7	17	19	8	16	5	10	82
Personality Studies of Organic Populations	0	3	12	16	8	16	11	12	78
Identification of Organic Signs in Rorschach Records	3	6	25	19	3	8	2	2	68
Lesion localization Tool	0	1	3	4	2	0	1	2	13
Exploration of Perceptual Skills	0	0	0	0	2	0	1	10	13
Statistical Analysis	0	1	0	0	1	1	0	3	6
Assist in Treatment Planning	0	0	1	1	1	2	0	1	6
Compare the Rorschach with Other Neuropsychological Instruments	0	0	0	3	0	2	0	0	5
Exploration of Evolving Organicity	0	0	0	1	0	0	0	0	1
<b><i>Totals by Decade</i></b>	<b>6</b>	<b>28</b>	<b>90</b>	<b>85</b>	<b>51</b>	<b>72</b>	<b>45</b>	<b>42</b>	<b>419</b>

Traumatic brain injury has been, and remains, one of the most fascinating of research populations. Even from the early years, an interest in identifying signs to detect and thus diagnose brain damage took clear precedence over the use of the Rorschach as a means to facilitate treatment planning. In 1929 the EEG machine was the most advanced medical technology since Marie Curie showed the world how to use

radioactivity to help wounded World War I soldiers. The search for Rorschach signs of organicity that Oberholzer had started was elaborated by Piotrowski (1957); this successful task was necessary due to the absence of imaging technology that exists today.

Some studies were crude, with gross generalizations made from single cases or from very small and poorly controlled samples. Tests of statistical significance were rare. In brain injury studies, confounding variables, such as location, source, and force of injury were frequently ignored and premorbid behaviors were often overlooked. Eventually, enough large-scale studies were also conducted to confirm and establish the consistency and importance of organic signs such as perseveration, cognitive impotence, and perplexity. Quite remarkably, given the nature of contemporaneous uses of the Rorschach method, studies of the psychic trauma that accompanied the physical trauma of brain injury were not undertaken.

Another important positive effect on neuropsychological research with the Rorschach came from the study of patients with brain tumors. As tumor surgeries were planned rather than random events, unlike traumatic brain injuries, they allowed for pre-operative as well as post-operative Rorschach studies and improvements in research design and analysis were immediately facilitated. In addition, studies of children with tumors encouraged interest in the relationship between physical development and cognitive development, particularly in the area of altered development.

Just as the neuropsychological populations Rorschachers have studied have changed as neurodiagnostic techniques have advanced, investigatory goals have also changed. There is more interest in degenerative disease such as Alzheimer's Disease, spongiform encephalopathies and other devastating dementias. Our continuing interest in traumatic brain injury, which is increasingly better defined by the complementarities of imaging tools and neuropsychological assessment tasks, is also seen from the perspective of maximizing each survivor's potential for functional independence.

## **Methodologies**

The single greatest weakness of Rorschach studies over the past eighty years has been the focus on single populations without matched control groups.

Today's review of research trends evident in 373 different neuropsychological studies shows that we continue to produce studies of single populations with too little comparison to normal controls. In the past eight decades, individual case studies



decreased from an average of 20% in the first four decades that were basically the early technology years to 8% in the last four decades, the advanced technology years. But studies of single neuropsychological groups dropped insignificantly from 50.5% to 49.7% and still comprise too many of our efforts.

Studies comparing neuropsychological populations with other clinical populations remained the same at 17% for both halves of the past eighty years, but studies that utilized a normal control group matched for demographic variables rose from 14% in the early technology years to nearly 24% for the advanced technology period. Although quantification of Rorschach data has become much more standardized, statistical analysis of the outcome data of multiple records, commonly missing from early studies, has frequently been inadequate in later studies. Only one meta-analysis has been possible to date. It is to be hoped that, as more carefully controlled studies emerge, additional analyses to confirm the robustness of our outcomes will be possible.

A fascinating review by Riklan and Diller (1957) highlights another serious problem with our past studies: "normal" controls were often not normal groups at all, but were taken from other medical or psychiatric populations.

Another common weakness of past studies has been the use of very small populations, sometimes as small as 5-10 patients, although there have certainly been exceptions. One of the most remarkable exceptions is a study published by Stauder in 1938, in which he reported on 2215 Rorschach records from 1780 subjects including 500 epileptics. I am not suggesting we take on a task of this magnitude, but we do need to look to sufficient sample sizes to support our conclusions.

A trend toward better definitions of research populations has been evident for several years and this is a particularly important factor in neuropsychological studies. In the past, for example, traumatic brain injury has been treated as a unitary concept in Rorschach investigations. Now, researchers are showing more regard for severity of injury, duration of acute injury, force of injurious impact and how much recovery time has elapsed prior to the patient's evaluation, all of which have been shown to be significant in other forms of neuropsychological testing. Even more recently Rorschach studies are identifying severity of brain injury with interest in comparing characteristics of mild, moderate, and severe levels of injury, and this is a step toward constructive research with treatment application outcomes.

**The future is here - how well did we predict it?**

At my request in 1988, seventeen experienced clinicians highly qualified in their respective fields as psycho-historians, neuropsychologists, or Rorschach experts agreed to predict how the Rorschach would be used for neuropsychology in the twenty-first century. They produced 157 predictive statements from eight open-ended questions, and were able to reach consensus on 44 of the predictions. Some were thought provoking, such as the idea that we should be developing new conceptual models for the Rorschach, and reached consensus very quickly. Other predictions were truly whimsical, like the suggestion that franchised stand-alone computerized Rorschach terminals would appear in shopping malls for self-service. I'm confident you will be glad to hear the experts also reached consensus on that one very quickly, voting it as decidedly unlikely to occur.

*Question 1* was about perception. The experts said perceptual research using the Rorschach would not increase in the next century, unless sophisticated equipment became available to monitor brain activity during the test administration. Such equipment is now available in both PET and SPECT scans; although none of the 1990s studies have used this equipment, nearly one quarter of this decade's neuropsychological Rorschach studies have been on perception so perhaps we will see some imaging studies with the Rorschach in the next few years.

*Question 2* asked about personality research and the experts predicted greater use of the method in applied neuropsychology, such as stroke or brain injury rehabilitation, as well as continued studies on the personality associated with certain neurological disease states. Only one 1990s study was related to neuropsychological treatment, but a full quarter have been investigating personality factors in neurological populations.

*Question 3* was specifically about the role of the Rorschach in the neuropsychologist's repertoire for the twenty-first century and the experts had a lot of trouble agreeing on specific ideas. They easily agreed that neuropsychologists need to be knowledgeable about the method and that it could be useful for longitudinal studies. It's my belief that this is a more important contribution to neuropsychology than the experts might have realized. In it's unique ambiguity, the Rorschach allows for an infinite variety of responses, a characteristic that is not shared by any other neuropsychological instrument. With most cognitive tasks, and certainly with most neuropsychological tests, the patients' first test experience, simply by being experienced and re-processed in memory, enhances the patients' performance on a second testing, which then enhances performance on a third testing and so on. The Rorschach is not vulnerable to this practice effect: even when a subject remembers previous responses, new responses are always possible and even likely.

*Question 4* asked the experts to consider how the Rorschach would evolve and, although they could not agree on exactly how, all the experts thought some level and type of computerization is inevitable. We have seen some of that inevitability in

action at this Congress. Past controversies generated questions 5 and 6, but the experts readily agreed the Rorschach would remain an important psychological method in the future, and that graduate training should include it, although there would always be some criticism of it. They also agreed that acceptance of the test requires production of empirically sound research studies.

### **Further suggestions**

As I looked over the 1990s Rorschach neuropsychological studies as well as the rest of the neuropsychological literature some other suggestions for productive research came to mind. I'd like to see an exploration of the psychic trauma that accompanies awareness of progressive brain pathology and the decision making that is faced by patients and families. Humankind not only lives longer, we are better at diagnosing progressive decline. Now we need to help people deal with it. I wonder about the effect on personality of the demented elderly who are treated with Aricept or other cognitive stimulants. I also wonder about early years: can we learn how violence is neuropsychologically mediated and develop a primary prevention by intervening before violent ideas become violent actions? I'm curious about the relationship between autism, Obsessive Compulsive Disorder and frontal lobe injury: I think their Rorschach records would be quite similar. I wonder about hyper-oral traumatically brain injured patients: has their experience with life-threatening injury increased their dependency needs? Has their new orality superseded other thoughts and needs? It is hard to imagine what the world looks like to a stroke patient with unilateral visual neglect. I wonder if the symmetry of the blots will help or hinder their production of percepts, and whether the method can still be used with them. A few months ago I found a grief model that reflects the stages of recovery a brain injury survivor demonstrates and I found myself wondering how that could be monitored (by serial Rorschachs, perhaps?) so unresolved bereavement could be avoided.

The data from the 1990s shows Rorschachers continue to be interested in neuropsychological populations. There are no indications that neuropsychologists will drop their interest in neuroanatomy but many are recognizing the need for applied neuropsychologists who assist patients to functional independence. The wealth of information that can be derived from the Rorschach, which remains one of psychology's most powerful tools, must not be overlooked: research collaborations between Rorschach experts and clinical neuropsychologists would be my personal choice for the future.

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