

Fluid and Rigid Boundaries of Paranoid and Nonparanoid Schizophrenics on a Role-playing Task

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Abstract: The concepts of fluid and rigid boundaries were assessed in an improvisational role-playing task in an attempt to differentiate paranoid from nonparanoid schizophrenics. Thirty-one schizophrenic patients divided into paranoid, intermediate, and nonparanoid groups were given an improvisational role-playing task. The resulting scenes were analyzed by Fluid Boundary and Rigid Boundary scales, which were developed on the basis of specific aspects of the physical and verbal representations of characters, objects, and settings. The hypothesis that variations in the disruption or emphasis of representational boundaries differentiate paranoid and nonparanoid symptomatology received support. Paranoid schizophrenics scored higher on the Rigid Boundary scale, i.e. erecting and/or exaggerating physical and interpersonal boundaries; and nonparanoid schizophrenics scored higher on Fluid Boundary scale, i.e. showing fused and fluid representations of characters, objects, and settings. Improvisational role-playing seems to hold promise as a medium with diagnostic value.

This study is an attempt to apply the construct of representational boundaries to the medium of improvisational role-playing in an effort to differentiate paranoid from nonparanoid schizophrenics. Representational "boundary" refers to distinctions between mental representations of self and other, between fantasy and reality, among separate conceptual realms, and between the body and the object world. Such representational boundaries manifest themselves in the person's ability to distinguish and differentiate these various phenomena in both his or her thoughts and actions. Disruptions in these boundaries may result in confused, fluid, or shifting representations of self and world, or, by a defensive overdevelopment of boundaries, in rigid and inflexible representations.

Psychoanalytic observers have commented on the fluid and deteriorated ego boundaries in schizophrenics, as evidenced in hallucinations, delusions, depersonalization, and other forms of thought disorder (Cameron, 1944, 1951; Federn, 1952; Searles, 1965; Tausk, 1948). Mahler (1968) has pointed to the importance of the erection of the self-

other boundary to the child's development toward individuation, and the pathological consequences which result if that process is interfered with. Jacobson (1964) emphasized that the early experiences of fusion in the child form the basis for the development of later object-relationships, and pointed to the process of differentiation as the critical factor in structuring the ego. Lidz, Fleck, and Cornelison (1965) observed boundary disruptions in the families of schizophrenics, and Searles (1960) maintains that the schizophrenic is unable at times to differentiate himself and others from nonhuman and inanimate objects.

Blatt and Wild (1976) have recently proposed that schizophrenic thought disorder can be understood as a reflection of an underlying impairment in maintaining boundaries, and have attempted to understand a wide range of research on schizophrenia in relation to this boundary concept. Cognitive, linguistic, interpersonal, self-concept, and family characteristics of schizophrenics can be shown, they assert, to be indicative of a fundamental impairment in the person's ability to construct and maintain boundaries.

Several empirical measures of boundary phenomena, mostly in relation to inkblot percepts, have been developed. Rapaport, Gill, and Schafer (1968) developed a number of different measures

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of thought disorder on the Rorschach including: contaminations, confabulations, and fabulized combinations. Blatt and Ritzler (1974) conceptualized that these three types of responses can be understood in terms of the boundary construct, and that they vary in severity of boundary disturbance, from contaminations as the most severe to fabulized combinations as a weaker form of boundary impairment. Several studies which utilized these measures were able to differentiate schizophrenics from nonschizophrenics (Blatt & Ritzler, 1974; Brenneis, 1971; Quinlan & Harrow, 1974).

Jortner (1966) used a separate scale in analyzing Rorschach responses, and was also able to differentiate schizophrenics, but found that the contamination response "generally does not correlate significantly with measures of mental illness" (p. 565). Fisher and Cleveland (1958) developed Barrier and Penetration scores, which they hypothesize refer to boundary aspects of the body image, and found that schizophrenics had more Penetration scores than nonschizophrenics (Fisher, 1966; Holtzman, Thorpe, Swartz, & Herron, 1961). Landis (1970) utilized a similar boundary measure of impermeability-permeability of percepts on the Rorschach and showed that greater degrees of psychopathology were accompanied by less impermeability and greater permeability. The present study is an attempt to extend the assessment of the boundary concept to improvisational role-playing.

Paranoid Schizophrenia and the Boundary Construct

Blatt and Wild (1976) hypothesize that different types of schizophrenia can be characterized by differences in types of boundary disruption. Specifically, they proposed that paranoid symptoms "can all be understood, in part, as exaggerated defensive efforts to prevent the dissolution of boundaries and accompanying experiences of merging and fusing" (p. 229). Nonparanoid schizophrenics are characterized instead by direct manifestations of the experiences of fusion and boundary disruption. Empirical support

of this notion is found in a study by Bower, Testin, and Roberts (1960). They developed two scales for the Rorschach, Arbitrary Tightening and Disorganization, by which they intended to measure "rigid, exaggerated attempts to control," and inadequate, disorganized control, respectively. They found that paranoid schizophrenics scored higher than nonparanoids on Arbitrary Tightening, while the reverse was true on the Disorganization scale.

Conquest (1963) and Fisher (1964, 1966) have shown that paranoid schizophrenics have significantly higher Barrier and lower Penetration scores on the Rorschach than nonparanoids, and conclude that paranoid symptomatology is associated with highly definite body-image boundaries. Witkin (1965) also found that paranoids were more field independent than nonparanoids, indicating they had a more articulated and clearly defined sense of self.

The primary aim of this study will be to test the hypothesis that paranoid, as distinguished from nonparanoid, schizophrenics will show more evidence of rigid boundaries while nonparanoid schizophrenics will show more evidence of fluid boundaries, as assessed by an improvisational role-playing technique.

Improvisational Role-playing

Dramatic role-playing is increasingly being used in treatment approaches, and several research efforts have tested empirically its applicability to diagnosis and personality assessment; (Bronfenbrenner & Newcomb, 1948; Hersen & Bellack, 1977; Rotter & Wickens, 1948; McReynolds, DeVoge, Osborne, Pither, & Nordin, Note 1). However, there have been few detailed descriptions of the variations in role-playing style across diagnostic populations (Curr & Arnaud, 1974; Harrow, 1951; Johnson, 1979; McReynolds & DeVoge, 1977). Focus has largely been on the content areas of the roles and how they reflect the process of an individual's treatment (Bricklin, 1975; Moreno, 1946), or how successfully he can perform certain behaviors, and not on the role's structural aspects

Table 1
Demographic Characteristics by Diagnostic Group

Variables	Groups		
	Paranoid (<i>n</i> = 10)	Intermediate (<i>n</i> = 11)	Nonparanoid (<i>n</i> = 10)
Males	7	8	5
Females	3	3	5
Age	22.1	23.0	20.9
Verbal IQ	112.0	115.2	114.1
Performance IQ	101.4	102.2	100.9
Length of Stay (days)	246.9	404.7	283.4
Number with Substantial Role-play Experience	4	5	6

such as its organization and articulation. An example of such a structural variable in improvisational role-playing is the degree to which the person differentiates his representations of various characters in both his physical (e.g. spatial, postural) as well as verbal behavior. These differentiations of characters, objects, and settings in the role-playing may be seen as boundaries between representations. Individuals whose cognition is characterized by a difficulty in maintaining boundaries could also be expected to have difficulty maintaining boundaries between characters, objects, and settings within an unstructured role-playing task. Thus, it is hypothesized that paranoid subjects will show more rigid and exaggerated boundaries in their role-playing behavior, while nonparanoid subjects will show higher frequencies of fluid and confused representations of characters, objects, and settings.

Method

Subjects

Subjects were 31 caucasian patients in a private, long-term psychiatric hospital who fulfilled the following criteria: diagnosis of schizophrenia, no major physical or organic symptomatology, between 16 and 35 years old, and had been admitted specifically for long-term inpatient treatment (over six months). Of the 45 patients who met this criteria, 4 were discharged before they could be tested, and 10 refused.¹

These 31 patients were divided into

Of those who refused to be tested, 4 were diagnosed paranoid schizophrenic, 6 were nonparanoid.

three diagnostic groups: *Paranoid* patients (*n* = 10) were those whose hospital diagnosis, determined by the therapist after a hospital-wide case conference, was paranoid schizophrenia (DSM II 295.3); *Intermediate* patients (*n* = 11) were those whose diagnosis was not paranoid schizophrenia, but where either their hospital diagnosis or the diagnosis from the psychological testing specifically mentioned "paranoid features"; *Nonparanoid* patients (*n* = 10) were those whose diagnoses from both therapist and psychologist made no mention of "paranoid features." Selections to these groups were made after the data were collected by an experienced clinician at the hospital who was blind to the hypotheses of the study and the patient's role-playing behavior, and independently by the senior author. Interrater agreement on assignment to groups was 100%.

Table 1 summarizes the data for sex, age, IQ (WAIS), and length of stay for each of the three groups. There were no significant differences on any of these variables. Table 1 also lists the number of patients in each group who had had "substantial" experience in role-playing at the time of the testing, as determined by the senior author, a drama therapist at the hospital. "Substantial" experience was previous participation either in a play or drama therapy group of at least ten weeks duration in the past two years.

Diagnostic Role-playing Test

Each subject in this study was administered the Diagnostic Role-playing Test

(DRPT), a version of which had been used for three years by the Activity Therapy department as an evaluation procedure to help in assigning patients to drama and dance therapy groups. A preliminary version of the DRPT consisted of ten social roles whose stereotypes involved either high or low degrees of each of the qualities of nurturance, control, sexuality, and competence, as described by Mann (1967). This initial selection was based on ratings by 12 undergraduate psychology students of over 100 social roles on the degree to which each of these qualities was reflected in the stereotypical notion of the role. For the present study, the five roles which stimulated the greatest amount of individual variation and expression were selected, based on experience with the preliminary version with patients not in the study. The five roles used were: grandparent, bum, politician, teacher, and lover.

Procedure

Patients were asked individually by the senior author to participate in this study. They were told that the purpose of the study was "to find out how different people play the same roles, not how good an actor each person is." In order to allay test anxiety, they were explicitly told that this was not a test of creativity or imagination. All subjects signed consent forms for the videotape and understood that other hospital staff might see the tapes for treatment and training purposes.

The administration of the DRPT occurred in a 12' by 16' room in the hospital. The videotape equipment was placed at one end in full view of the subject. Only the investigator (DJ) who gave the instructions and videotaped the role-playing was present with the subject. A table and a chair, with the other props on them, were on the side near a wall. The instructions were as follows:

I am going to ask you to act-out five separate roles, one at a time. In each case, show me what these people do. Make sure to try to act out as much about them as you can. Do them in any way that you

wish. You are free to choose whichever sex you want to be for each role. You may use any of the props you see here in any way that you wish, including talking on the telephone.

(The investigator then points to each object and says:) Wastebasket, table, chair, stick, cloth, piece of paper, cup, book, hat, telephone, man's overcoat, and woman's dress. Try not to plan out what you will do. Take your time, and tell me when you have finished. Any questions? Let us begin with... grandparent. (Each subject then receives the five roles in the same order: grandparent, bum, politician, teacher, lover.)

Subject's questions regarding the role-playing once they had begun were answered, "It's up to you." The investigator stood behind the video camera, looking not at the subject but at a monitor. At the completion of the test and a series of other tasks which were part of another study, the investigator asked the subject if he or she wished to see the tape and re-played it if requested. The recording procedure required between 20 and 40 minutes.

Content Variables

The resulting 155 scenes (5 per subject) were scored for items on two scales. The Fluid Boundary scale includes eight items in which the representations of characters, objects, and settings are fluid and shifting, or where the boundaries between aspects of the role-playing are fused. The Rigid Boundary scale includes six items in which the various representations are patterned and rigidified, or where differentiations between aspects of the role-playing are stressed.

Table 2 lists the definitions of the items in these scales. The rationale for including the various items in the scales is as follows: Breaking Role, Fluid Character, Fluid Setting and Fluid Object are taken to be manifestations of boundary fluidity; that is, the inability to maintain stable and consistent representations of characters (Fluid Character), objects (Fluid Objects), or environment (Fluid Setting), or to maintain the role-playing situation itself (Breaking Role). In contrast, Perseveration, Concrete Replacement,

Table 2
Definitions of Scale Items

Fluid Boundary Scale

Breaking Role: Momentarily coming out of role: e.g., commenting on performance, attempts to engage the investigator.

Fluidity: Arbitrary and unrepresented changes in aspects of the (1) characters, (2) setting, or (3) objects; e.g., a character begins to speak in a different accent, it begins to snow in what was a summer scene, a mimed object changes shape.

Intrusion: A foreign, incongruous element is interjected into the enactment; e.g., subject suddenly makes a bizarre face at the camera, or speaks in a completely different voice.

Self-reference: The merging within the enactment of aspects of the subject's real life and his role; e.g., the bum is interviewed for a TV show (reference to the video camera), the politician is admitted to a mental hospital.

Loss of Distance: Excessive or bizarre elaboration which suggests the subject has lost distance from the role-playing, confusing its pretend quality with reality; e.g., the subject becomes tearful, or actually destroys a prop.

Fusion: The merging or blending of aspects of different characters, objects, or settings; e.g., after eating a German chocolate cake, the grandparent begins speaking in a German accent; carrying out the actions of one character while speaking with the voice of another character.

Rigid Boundary Scale

Perseveration: Repetition of specific characters, settings, or activities from a prior scene.

Concrete Replacement: Using a prop, wall, or floor to represent merely the physical presence of another object or person; e.g., when the person talks into a wall to another character, or when the lover hugs a dress which is supposed to represent his girlfriend.

Enter/Leave: Representation of the character entering or leaving a setting; e.g., when the bum goes from the street to a bar.

Boundary: Any representation of an edge, border, limit, or barrier, either verbally referred to or acted-out; e.g., door, river, street, podium.

Narration: Speaking in the third person about the scene.

Telephone: Use of the telephone to interact with other characters.

Enter/Leave, and Boundary are possibly behaviors which can be utilized to prevent boundary fluidity. Repetitive representations of the same action, character, object, or setting in scene after scene (Perseveration), concretization of the "mimed" character or object with a real, physical object (Concrete Replacement), or creation of physical boundaries within the setting (Boundary) or between them (Enter/Leave) are taken to indicate attempts to diminish fluidity by establishing patterns, limits, or solidity to the representations within the role-playing.

A presumably more severe boundary disruption than fluidity is boundary fusion, in which two separate events are merged. Intrusion, Self-reference, Loss of Distance, and Fusion are examples of this phenomenon included in the Fluid

Boundary scale. Confusion may exist between the role and the subject's real-life situation (Self-reference), the subject himself (Loss of Distance), or between separate aspects of the scene (Fusion). On the other hand, Narration and Telephone in the Rigid Boundary scale are indicative of attempts to prevent such confusion. By narrating, the subject steps back from the role he is portraying. Speaking in the third person about his own role reasserts the distinctions between self and role. By interacting with another character via the telephone, the subject places a physical barrier between himself and the other, who no longer has to be represented as being in the setting.

Analysis

Reliability was established ($r > .70$) for both scales between the senior author

Table 3
Means and Analysis of Variance of Fluid and Rigid Boundary Measures

Measures	Groups			ANOVA		
	<i>p</i> (<i>n</i> = 10)	<i>I</i> (<i>n</i> = 11)	<i>np</i> (<i>n</i> = 10)	<i>M</i> _s	<i>F</i> <i>df</i> (2,28)	Linear <i>p</i> vs <i>np</i> <i>df</i> (1,28)
Rigid	.517	-.293	-.195	.291	6.86***	8.97**
Fluid	-.054	-.317	.402	.337	4.09**	3.18*
Difference	-.571	-.024	.597	.398	8.59***	17.65***
Percent Fluid (raw score)	45.4	53.8	65.9	221.4	4.80**	9.49***

Note: Paranoid = *p*; Intermediate = *I*; Nonparanoid = *np*.

* *p* < .10.

** *p* < .05.

*** *p* < .01.

and each of two raters in pretraining sessions using a set of tapes of patients not in the main part of the study. Then the two raters, who were blind to the hypotheses of the study and the diagnosis of each patient, scored each scene. Each item was scored for its presence or absence in each scene; the range for each item was therefore 0 — 5. Scenes were scored in the same sequence for all patients. The order of protocols for each rater was randomized. Results were summed across the five scenes for each rater for the Fluid Boundary and Rigid Boundary Scales. In addition, two composite scores were derived: Difference (total Fluid — total Rigid), and Percent Fluid [(total Fluid/total Fluid + total Rigid) × 100]. Difference and Percent Fluid were two measures of the relative balance of subjects' Fluid and Rigid scores, included due to the relevance of such composite scores in previous research (Landis, 1970).

Reliability and Homogeneity

Pearson interrater reliability coefficients for the entire sample corrected by the Spearman-Brown formula were as follows: Fluid: .82, Rigid: .86, Difference: .82, and Percent Fluid: .68, (all significant at the .01 level). The consistencies of these measures across the five scenes (alpha coefficient) were: Fluid: .78, Rigid: .58, Difference: .52, and Percent Fluid: .48, (all significant at the .01 level). Final scores for each subject were computed by combining the two rater's scores on each item, transforming the

sum to *Z* scores, and obtaining the resulting sums of Rigid Boundary, Fluid Boundary, and Difference Score. The Percent Fluid score, however, was based on the raw scores.

Results

There were no significant differences in duration of the scenes (Paranoid: *M* = 2.10 min.; Intermediate: *M* = 2.06 min.; Nonparanoid: *M* = 2.31 min.; (*F*(2, 28) = 0.09), nor were there any significant correlations between duration and the four measures (Fluid: *r*(29) = .30, Rigid: *r*(29) = .30, Difference: *r*(29) = .09, Percent Fluid: *r*(29) = .04).

The two primary measures, Fluid and Rigid Boundary, have a weak positive correlation (*r*(29) = .19, *p* < .31). The Difference and Percent Fluid measures are highly correlated (*r* = .94, *p* < .01). None of the measures are significantly correlated with IQ, length of stay, or level of previous role-playing experience.

The results for each of the three patient groups on the four measures are listed in Table 3. As predicted, the paranoid patients scored significantly higher than the nonparanoid patients on the Rigid Boundary measure, and significantly lower on the Fluid Boundary measure. The Intermediate group was consistently low on both measures, however. The predicted linear relationship between the boundary scores for the three groups (evaluated by the linear contrast) emerged on three of the four measures. The significant linear relationship between

Table 4
Median-split Comparisons of Three Groups on Composite Boundary Measures

Measures		Groups			<i>p</i> *
		Paranoid	Intermediate	Nonparanoid	
Difference	> Median	1	6	9	.0005
	≤ Median	9	5	1	
Percent Fluid	> Median	1	5	9	.0005
	≤ Median	9	6	1	

* Fisher's Exact Test; paranoid and nonparanoid groups only.

the degree of paranoid symptomatology and boundary fluidity is evident especially in the Difference and Percent Fluid measures.

Discrimination Between Paranoid and Nonparanoid Patients

Both Difference and Percent Fluid measures are good discriminators of paranoid and nonparanoid patients (see Table 4). Nine of the ten paranoid schizophrenics scored below the median on each measure, while nine of the ten nonparanoid patients scored higher.

Within-scale Analysis.

Twelve of the 14 categories yielded scores in the predicted directions regarding the Paranoid and Nonparanoid groups ($p < .01$, Binomial Test). Only Fluid Setting and Fluid Objects yielded inconsistent results. On planned comparisons between paranoid and nonparanoid groups, Boundary ($F(1,18) = 10.71, p < .01$), Intrusion ($F(1,18) = 8.09, p < .01$), and Breaking Role ($F(1,18) = 6.27, p < .05$) were significantly different, and Fluid Character and Perseveration were nearly significant ($p < .10$).

Discussion

The major findings of this study indicate that rigid and fluid boundary properties can be consistently and reliably assessed through improvisational role-playing, and that paranoid and nonparanoid schizophrenics show differences in their representations of characters, objects, and settings. The nature of these differences is consistent with the hypothesis proposed by Blatt and Wild (1976) that paranoids tend to exaggerate the representations of boundaries while

nonparanoids tend to show more disrupted and more fluid boundaries. That paranoid schizophrenics can be distinguished from nonparanoid subjects by structural characteristics of the role-playing alone suggests that the form of the inability to maintain firm but flexible boundaries (reflected by either overly rigid or overly fluid representations) is related to the specific type of schizophrenia. It remains to be seen whether the fluidity and rigidity of boundaries in role-playing correlate with other previously reported measures of boundary fluidity or rigidity, such as contamination, barrier, and penetration responses on the Rorschach, or with aspects of cognitive style, such as field dependence. Quinlan and Harrow (1974) among others have questioned whether the boundary concept is in fact a unified one, or rather describes a set of diverse attributes, only loosely related.

An unexpected result was that the Intermediate group scored significantly lower than the other two groups on both the Fluid and Rigid Boundary scales. This was not due to lower productivity as assessed by length of scene. The question remains as to what characteristic differentiates this group. Perhaps boundaries are not as salient an issue for these subjects. On inspection of case records, several patients in the Intermediate group appeared to have less severe pathology, as suggested by the fact that all four "borderline" subjects in the study were in this group. Future research will need to assess severity of pathology. It is possible that the results are based on differences in obsessive traits among schizophrenic subjects, as a close affinity between ob-

sessive and paranoid states has been observed (Shapiro, 1965). Further data are needed to determine whether the study scales could differentiate obsessive-neurotic subjects from paranoid schizophrenics.

Two of the 12 sub-scales, Fluid Setting and Fluid Objects, showed inconsistent results. They correlated more with Rigid Boundary scores than with Fluid Boundary scores, and paranoid subjects tended to score higher on these measures than nonparanoids. This result may be due to the fact that the use of an actual prop and a mimed object were both scored in the Fluid Object item, and shifts of setting as well as changes within a setting were scored in the Fluid Setting item. On re-scoring the tapes, it was found that paranoid patients used more props ($F(1,28) = 8.05, p < .01$) and have more shifts of setting ($F(1,28) = 7.04, p < .05$) than the other two groups. Another possible interpretation is that the relationship between rigidity and paranoid diagnosis is more accentuated in representations of people than of objects or environments.

The scale items were chosen as examples of aspects of the boundary construct; they were found to be good discriminators of the paranoid and non-paranoid subjects. Thus this study supports the applicability of the representational boundary concept to improvisational role-playing. The data suggest that the scoring proposed for the Diagnostic Role-playing Test yields a relatively reliable and consistent instrument which appears to tap a salient dimension in the diagnosis of paranoid/nonparanoid schizophrenia. Further research is necessary to examine its relationship to other measures of psychopathology and boundary disruption.

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