

Original Article

## Human Face Responses in the Rorschach Test A Reconsideration

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**Abstract.** The present study explores the human face responses in the Rorschach test. We suggest that, although the experience of the human face is essential to our psychological development and to our interaction with the world, this category of responses has always been considered as one of the partial human contents, together with responses such as an eye or a finger. The study provides background information about recent research findings concerning face perception and the role of face perception in early psychological development and suggests that Rorschach face responses may be better distinguished from other human detail contents and may have a special clinical significance. In order to explore face responses in the Rorschach, these responses were analyzed in a reference sample of nonpatients ( $n = 247$ ) conducted in France as part of a of the French-language normative project. Descriptive data on face responses according to the Comprehensive System are provided as well as an analysis of their perceptual characteristics. In addition, a subgroup of nonpatients giving a relatively high number of face responses was found to differ from other nonpatients on several self and interpersonal perception variables. The perceptual features and the possible clinical significance of face responses on the Rorschach are discussed with an emphasis on the possible merit of distinguishing the face category from the other human content details.

**Keywords:** Rorschach test, human face responses, face perception, psychological development

## Introduction

The access to the face is straightway ethical. You turn yourself toward the Other as toward an object when you see a nose, eyes, a forehead, a chin and you can describe them. The best way of encountering the Other is not even to notice the color of his eyes!

Emmanuel Levinas (1985, p. 85)

The human face is one of the most important object categories that we recognize. Findings from developmental psychology, perception research, and psychoanalytic thinking emphasize the particularities and the importance of the face (e.g., Bruce & Young, 1998; Maurer, Le Grand, & Mondloch, 2002; Meltzoff & Moore, 1983, 2002; Morton & Jonson, 1991; Winnicott, 1971). Human beings tend to look for faces and read various social and emotional signals therein. The face is tightly bound up with a person's identity and gives us the impression of the whole person (think, for example, of portraits, identity photos, and video chats). Nevertheless, in the Rorschach literature human face responses have always been considered as one of the human detail contents, a categorization that implies a partial human perception and binds these responses together with percepts like fingers, eyes, or legs.

In this article, we suggest reconsidering the Rorschach human face responses. To this end, we provide background information on research concerning face perception, describe the role of the face in early development, and review the Rorschach literature on face responses. We then examine face responses in a large nonpatient reference sample. The characteristics of the Rorschach face responses and their potential clinical implications are discussed with an emphasis on the possible merit of distinguishing the face category from other human content details.

## Face Perception

Research on face perception in the last 40 years has provided much evidence that the human face is processed in a unique way, different from the processing of objects in general (Bruce & Young, 1998). Studies on newborn infants suggest that they prefer faces to other stimuli from a very early age (Morton & Jonson, 1991). It has also been shown that newborns with a mean age of less than an hour already prefer a schematic face pattern to control stimuli, suggesting an innate face-detection mechanism (Morton & Jonson, 1991). Moreover, newborns in their first

days of life are able to differentiate their mother's face from a stranger's face – and show a preference for the first (Bushnell, 2001).

Human beings have a remarkable ability to perceive faces, even in the absence of normal facial features. The paintings of Arcimboldo (1527–1593), which date back more than 400 years, provide a vivid example of this human tendency, as we immediately perceive human faces out of an arrangement of totally different objects (such as fruits, flowers, or animals). This ability seems to be based on configural processing (i.e., perceiving not individual features but the relations among them). Unlike the processes involved in nonface object recognition that rely on the detection of individual features, face perception is usually holistic or configural rather than elemental or piecemeal. According to Maurer et al. (2002), configural processes can be distinguished into three types, namely, sensitivity to first-order relations, holistic processing, and sensitivity to second-order relations.

Sensitivity to first-order relations refers to the organization of the individual features in a way that corresponds to a face pattern, i.e., seeing that a stimulus is indeed a face because its features are arranged in a certain way with two eyes above a nose, the nose above the mouth, etc. (Maurer et al., 2002).

Holistic processing concerns the “gluing together” of the individual features into a gestalt. When people detect the first-order relations of a face, they tend to process the stimulus as a gestalt, thus making it more difficult to extract information about individual features. The most convincing demonstration of the processing of the face as a whole is the “composite face effect.” Studies have shown that subjects are slower and less accurate in recognizing the top half of one face presented in a composite with the bottom half of another face (Hole, 1994; Young, Hellawell, & Hay, 1987). This phenomenon demonstrates that, when faces are processed, the internal features are so strongly integrated that it becomes difficult to break the face down into isolated features. Another demonstration of this holistic face processing is the “part-whole recognition effect,” showing that people are much more accurate in recognizing the identity of a face feature when it is presented in the context of the whole face (Tanaka & Farah, 1993). Since the face is processed as a gestalt, the whole face is more than just the sum of its parts.

Finally, sensitivity to second-order relations refers to the perception of the spatial distances of the internal features of the face. Human beings are extremely sensitive to small variations of the spatial distances among the internal features of the face (Maurer et al., 2002).

### Faces and Psychological Development

The human tendency to perceive faces as organized wholes develops through the years (de Heering, Houthuys, & Rossion, 2007) and might be reduced in individual with autistic spectrum disorders (Behrmann, Thomas, & Humphreys, 2006).

From a developmental perspective, faces occupy a special place in the emotional and interpersonal development of the infant. Newborns seem to be especially attuned to face stimuli and show a preference for their mother's face. Infants begin to imitate face gestures and facial expressions at a very young age (Meltzoff & Moore, 1983, 2002). This ability has a special interest because the infant imitates behaviors he/she sees but cannot see him-/herself doing. This imitation behavior embodies mutuality and reciprocity, and forms the very early form of preverbal communication. As Stern (1977) emphasized, the exchange of face expression between the mother and the young baby forms the first social interactions and brings the infant into the social world.

According to Winnicott (1971), a well-known British psychoanalyst, the face of the mother has a special role in the psychological development of the young infant. The mother's face, looking at her infant, forms a role of a mirror in reflecting back to the infant something about his or her own self. Winnicott (1971) writes: "What does the baby see when he or she looks at the mother's face? I am suggesting that, ordinarily, what the baby sees is himself or herself. In other words the mother is looking at the baby and *what she looks like is related to what she sees there*" (p. 112). For Winnicott (1971), this experience of being reflected in the mother's face signifies the beginning of the infant's exchange with the world, "a two-way process in which self-enrichment alternates with the discovery of meaning in the world of seen things" (p. 113).

Ogden (1992) continues and develops Winnicott's ideas by emphasizing the dialectical tension between sameness and difference in the mother's mirroring role. According to Ogden (1992), the mother, by recognizing and identifying with the baby's internal states, returns something to the baby back that is not completely identical to the experience and that allows babies to see themselves at a distance from the experiencing self. This provides the infant the beginnings of the awareness of the difference between I and me, between the self-as-subject and self-as-object – and thus the beginning of self-consciousness and self-reflection.

### **Human Faces in the Rorschach Test**

In the Rorschach, human face responses have not been treated or coded differently from other human detail responses, Hd or (Hd). Hermann Rorschach (1921/1942) first made the distinction between responses of a whole human figure and responses of parts of the human figure, and these content categories were retained by other Rorschach systems over the years. According to Hermann Rorschach, we would expect to find more whole human responses than human detail contents in a normal protocol (Rorschach, 1921/1942). Since face responses were always included in the human detail content category, not much has been written on face responses in particular. For human detail contents in general, several authors have pointed out a relationship between many part-human responses and anxiety, in particular anxiety concerning other human beings and relationship difficulties (Rapaport, 1946; Rausch de Traubenberg, 1970).

Klopfer and Davidson (1962) suggested that repeated face or head responses may indicate a concern about or an emphasis on intellectuality, with intellectualization or compulsion as defenses. They also give special attention to profile responses as possible indication of uneasiness with oneself and others. Piotrowski (1965) also mentioned profile responses and related them to anxious preoccupation with the intentions of others. Another author who mentioned face responses is Bohm (1958), who described the special phenomenon of face stereotypy as a symptom of phobic anxiety.

Facial mask responses in the Rorschach, coded (Hd), seem to be based perceptually on the gestalt of a face. Nevertheless, clinically, they might have a different signification than face responses. Bohm (1958) described the mask response as a special phenomenon that might indicate "... a stiff and lifeless view of the world and point to a deficiency in affective contact" (p. 136). Schafer (1954) regarded facial mask responses as indicating a cautious, timid, or slow emotional tone and interpersonal atmosphere, and Klopfer and Davidson (1962) interpret these responses as a possible indication of an emphasis on role-playing to avoid personal exposure.

In the Comprehensive System (CS) (Exner, 2003), face responses are coded as human details contents that contribute to inferences concerning self and interpersonal perception. The number of Hd responses also contributes to the Hypervigilance Index (HVI), the Good Human Rep-

resentation (GHR), and the Poor Human Representation (PHR) special scores (Viglione, Perry, Jansak, Meyer, & Exner, 2003).

One possible implication of examining face responses separately could apply to the human contents ratio,  $H:(H) + Hd + (Hd)$ , to which face responses contribute. It is assumed that subjects with a more realistic and integrative self and interpersonal representations produce more whole human responses than other human contents. When the right side of the ratio is bigger than the left one, the self-image and interpersonal representations are assumed to be based more on imagination and internal representations and coincide less with reality (Exner, 2003). Although this rationale seems justified concerning fictional and partial human responses as compared to the full human images, it might not apply to the realistic face responses. As noted, face responses do seem to reflect something of the whole perception of the person and are very different from other human detail contents, such as fingers or a foot. In addition, empirical studies have challenged this ratio, as many reference samples around the world failed to find the expected direction of the human contents ratio (Meyer, Erdberg, & Shaffer, 2007). Thus, distinguishing Hd face responses from the right side of the ratio might improve its distinctive power.

To summarize, the findings from research on face perception emphasize the particularities of the perception of this object category. It seems that, unlike many other objects, faces are perceived as a whole, as a gestalt, where the individual features are less important to the perception of the stimulus as a face. If we think of face responses in the Rorschach in light of the research on face perception, the question occurs whether these responses are perceived differently from the other Rorschach responses. First, it seems that face responses may not be as partial as is implied by the Hd coding. And we could make the hypothesis that, for face responses, the resemblance of the features of the face is less important than their organization as a gestalt of a face – in which case contours may not be essential at all to the Rorschach face response. In addition, knowing that people have a tendency to “look for faces” might help us understand some of these responses, especially when they do not seem to coincide with the objective features of the blot.

Clinically, the importance of the face in the early development of the sense of self and self-awareness, in the formation of identifications and the beginning of the interaction between the inner and the outer realities, could direct us to the clinical significance of these responses in the Rorschach. First, it points to the possibility that these responses might

be especially rich in projective material. Second, it might help us understand phenomena like the many face responses in a protocol, which may indicate difficulties in the internalization of the function of the face in early development. In this explorative study we examine these questions and point out their possible implications by analyzing the Rorschach face responses in a nonpatient reference sample.

## Method

In order to provide some data on Rorschach face responses in a nonpatient population, we analyzed this type of response in a nonpatient reference sample composed of 247 adults.

### Participants

Participants were 247 nonpatient adults (141 men and 106 women) with a mean age of 41.37 ( $SD = 12.05$ ). They were recruited from workplaces, sports clubs, and a charity organization in several areas in France to form the first two subsamples (Phase 1 and Phase 2) of a French-language normative project designed to provide normative data concerning the Rorschach CS (Sultan et al., 2004). The participants were informed that their participation was needed for research purposes, and that individual data would remain strictly anonymous. In exchange for their participation, a donation was offered on their account to a charitable organization of their choice. The inclusion criterion was defined based on the short version of the General Health Questionnaire (GHQ-12) (Goldenberg, 1978) together with three open-ended questions. We excluded 45 subjects posthoc according to these criteria. In addition, 18 participants were excluded because of card rejection, defective inquiry, or insufficient location information. One additional protocol was excluded because of language problems, and two protocols were excluded because some of their material was lost. The Rorschach was administered by 19 examiners (no more than 21 protocols for each), all clinical psychologists who had been trained in the Comprehensive System.

Data on the first phase of this nonpatient sample ( $n = 146$ ) has already been published (Sultan et al., 2004). In addition, part of this sample also served for a stability study on the Rorschach (Sultan, Andronikof, Ré-

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veillère, & Lemmel, 2006; Sultan & Meyer, 2009). Additional information on recruitment, testing organization, and quality-control procedures is available in previous reports of the research group (Sultan et al., 2004, 2006; Sultan & Meyer, 2009).

Interscorer reliability was checked for 65 protocols that were randomly selected and rescored ( $R = 1414$ ), using the exact agreement for a single-rater ICC according to a one-way random effects model. ICC values for human contents were excellent (Chicetti, 1994) and ranged from .89 for Hd to .91 for H. ICC values for other variables used in subsequent analysis were also all excellent, ranging from .78 for FQx- to .99 for W location, with the exception of the special score MOR, which had a good ICC value of .74.

### **Defining Face Responses**

Human face responses were defined as all responses in which the head or the face of a person is described and which do not include any other body parts (such as shoulders), whether in front-view or profile. Face and head responses were both regarded as face responses since we have noticed that participants tend to describe what seems to be the same percept as either a head or a face. We paid special attention to the differentiation between realistic human face responses, Hdf, and fictional or mythological face responses (Hdf). This differentiation is in our view important since the interpretation of fictional versus realistic faces might not be the same. In fictional face responses the element of their distance from real human percepts might be more important than the fact that they concern faces; we did not want to let this factor effect our analysis. In addition, mask responses were not included together with face responses, based on the rationale that they might have a different clinical implication than face responses, as was hypothesized by several authors including Exner (2001) who scores mask responses in the fictional category, (Hd).

### **Analyzing Face Responses in a Nonpatient Sample ( $n = 247$ )**

Human face responses were detected and analyzed in our nonpatient sample in order to provide descriptive data on this kind of responses in a nonpatient population. Human detail and mask responses were also

analyzed to examine their relationship to the face responses. We also present the human content ratio in the sample and its variation when subtracting the Hd face responses from the right side of the ratio.

The perceptual characteristics of human face responses were explored. We examined on which cards these responses are seen, at which locations of the blot, and their adequacy in the features of the blot (their form quality). In addition, in order to test whether face responses might be particularly full of projective materials, all face responses were read to check whether they contain descriptions of expressions (i.e., smiling, looking sad, angry, etc.) or of special characteristics or adjectives of the person seen (“a vicious face”). We also regarded responses that contained a remark regarding the esthetic value of the face, such as a pretty or an ugly face.

### **Comparison of Participants Giving Many Face Responses and Other Nonpatient Participants**

To further elucidate possible implications of human face responses, we contrasted two subgroups. Group 1 consisted of participants who gave three or more face responses in their protocols ( $n = 12$ ), and group 2 consisted of the rest of the participants in the sample ( $n = 235$ ). Since we assume that realistic and fictional face responses might differ on the clinical implications they might reflect, we considered only realistic face responses in the definition of this subgroup. Fictional face responses may have a special implication derived from their fictional or mythological quality that may obscure the implications that can be inferred by the identifying a tendency to give many face responses.

The two groups did not significantly differ on their average age ( $M = 42.00$ ,  $SD = 11.64$ , for the “many-face” group and  $M = 41.34$ ,  $SD = 12.01$ , for the other nonpatients;  $t(245) = .90$ ,  $ns$ ) nor their sex (7 men and 5 women vs. 132 men and 101 women;  $\chi^2 = .01$ ,  $ns$ ).

These groups were compared on selected Rorschach CS variables. First, we wanted to examine two hypotheses from the Rorschach literature about the possible implications of face or human detail responses. Rapport (1946) and Rausch de Traubenberg (1970) suggested that many human detail responses reflect anxiety, especially concerning human interactions. Taking the Rorschach variable of the number of diffuse shading responses (SumY) as a potential indicator of feelings related to helplessness and anxiety (Exner, 2003; Klopfer, Ainsworth, Klopfer, &

Holt, 1954), we compared this variable in the two subgroups. Another hypothesis examined was the relationship of many face responses and the use of intellectualization as a defense (Klopfer & Davidson, 1962). To this end, the intellectualization index ( $2AB + Art + Ay$ ), considered as offering information about the use of this mechanism (Exner, 2003), was compared between the groups.

Next, in order to examine whether many face responses in a protocol can be related to the way subjects founded their self-perception and the way they perceive and interact with others, the two subgroups were compared on selected Rorschach variables that form the self and interpersonal perception sections (Exner, 2003). These were the ego index [ $3r + (2)/R$ ], reflection responses ( $Fr + rF$ ), form dimension responses (FD), Vista responses (SumV), anatomy and X-ray ( $An + Xy$ ), morbid responses (MOR), whole human responses [H], human contents other than pure human responses, realistic face responses excluded [ $(H) + nonfaceHd + (Hd)$ ], active responses (a), passive responses (p), texture responses (SumT), food responses (Fd) cooperative interaction (COP), aggressive responses (AG), personalized responses (PER), and the isolation index ( $Bt + 2Cl + Ge + Ls + 2Na/R$ ).

Given that many of these Rorschach variables do not distribute normally, and that one of the group compared is composed of a small number of subjects, the Mann-Whitney nonparametric statistics was used. In addition, the hypervigilance index (HVI) was compared between the two groups by using a chi-square test.

## Results

### Face and Human Responses in the Nonpatient Sample

Table 1 presents the descriptive statistics of face and human detail responses in the French nonpatient sample. More than half of the participants give at least one face response in their protocols (the frequency of face responses is 131). The mean of face responses in a protocol is .93, and the number of faces can be as high as 10 for a single protocol. The majority of face responses are realistic ones, and the fictional face responses form only one quarter of all human face answers. In addition, realistic face responses form 43% of the Hd responses, while the majority of (Hd) responses is composed of fictional faces and masks (80%).

## Human Face Responses in the Rorschach Test

*Table 1.* Descriptive data for human detail responses, human face responses and facial mask responses

	No.	Mean	SD	Min	Max	Freq	Median	Skewness	Kurtosis	CS code
Hd <sup>a</sup>	407	1.65	1.58	0	11	179	1	1.40	4.15	Hd
(Hd) <sup>b</sup>	204	.83	.97	0	4	132	1	1.18	.90	(Hd)
Hd + (Hd)	611	2.48	1.93	0	13	209	2	1.05	2.70	Hd + (Hd)
Face <sup>c</sup>	173	.70	1.07	0	10	112	0	3.49	23.31	Hd
(Face) <sup>d</sup>	57	.23	.52	0	3	47	0	2.38	5.75	(Hd)
Face + (Face)	230	.93	1.25	0	10	131	1	2.46	11.37	Hd + (Hd)
Mask <sup>e</sup>	107	.43	.66	0	3	86	0	1.50	1.95	(Hd)

*Notes.* <sup>a</sup>Hd = Human detail; <sup>b</sup>(Hd) = Human detail, fictional; <sup>c</sup>Human face responses, realistic; <sup>d</sup>Fictional human face responses, masks excluded; <sup>e</sup>Facial mask responses.

To further examine the relationship between human face responses and other human detail responses, we computed Pearson correlations between face responses and the other human detail answers. The results revealed no significant correlation between the number of human detail responses that are not faces and the number of faces in a protocol ( $r = 0.07, ns$ ).

The average of the human content ratio [H:(H) + Hd + (Hd)] in the sample is 2.14:3.47. When distinguishing Hd face responses from this ratio, creating a triple ratio, H:Hdf:(H) + nonfaceHd + (Hd), this ratio becomes 2.14:0.70:2.77.

### The Perceptual Characteristics of Face Responses

The number, locations, and form quality of face responses (masks excluded) are presented on Table 2. There seem to be substantial differences in the number of face responses evoked by the specific card. Many of the face responses come from card VII (34% of the face responses) and from card X (23%). Almost all of the face responses to card VII are given to D areas. In fact, many of them were given to the D1 area, and many have an ordinary form quality; yet 22% of the face responses to card VII have a poor form quality, most of them were given to the area of D3, a face response considered as having poor form quality unless the face is described as fictional. Card VII seems to be the only card that clearly evokes the percept of a human face, a percept that has a good form quality and is common and popular. This is a card that has distinctively higher rates of good form human responses (61% of the responses).

Table 2. Number, location, and form quality for human face responses, masks excluded

Card	No. face responses <sup>a</sup>		Location <sup>b</sup>				Form quality <sup>b</sup>		
			W	D	Dd	S	FQo	FQu	FQ-
I	7	(3%)	2 (29%)	3 (43%)	2 (29%)	2 (29%)	1 (14%)	5 (71%)	1 (14%)
II	23	(10%)	7 (30%)	3 (13%)	13 (57%)	13 (57%)	2 (9%)	7 (30%)	14 (61%)
III	16	(7%)	2 (13%)	10 (63%)	4 (25%)	3 (19%)	2 (13%)	-	14 (88%)
IV	4	(2%)	-	1 (25%)	3 (75%)	-	1 (25%)	1 (25%)	2 (50%)
V	5	(2%)	-	1 (20%)	4 (80%)	-	2 (40%)	2 (40%)	1 (20%)
VI	11	(4%)	-	6 (55%)	5 (45%)	-	5 (45%)	2 (18%)	4 (36%)
VII	79	(34%)	2 (3%)	73 (92%)	4 (5%)	2 (3%)	48 (61%)	14 (18%)	17 (22%)
VIII	12	(5%)	2 (17%)	7 (58%)	3 (25%)	4 (33%)	-	5 (42%)	7 (58%)
IX	19	(8%)	1 (5%)	15 (79%)	3 (16%)	10 (53%)	4 (21%)	7 (37%)	8 (42%)
X	54	(23%)	6 (11%)	1 (2%)	47 (87%)	51 (94%)	2 (4%)	1 (2%)	51 (94%)
Sum	230	(100%)	22 (10%)	120 (52%)	88 (38%)	85 (37%)	67 (29%)	44 (19%)	119 (52%)

Notes. <sup>a</sup>In parenthesis: percentage of responses out of all face responses; <sup>b</sup>In parenthesis: percentage of responses out of the face responses to the card.

Almost all face responses to card X (51 out of 54 responses) are ones in which the face does not have contours, which is regarded by Exner (2003) as having poor form quality (either WS responses, DdS22 with or without the areas of D11 and D9, either with the card in the original position or an inverted one). In fact, this kind of face response to card X is rather common and appears in 18% of the protocols. Given the high frequency of this “poor form” response, we will pick up on it later.

An examination of the locations of face responses shows that more than half of the face responses are given to D areas, and more than one-third are given to Dd areas, a much higher percentage than the rate of Dd responses in general. Moreover, more than one-third of the face responses include the white areas of the blot (S locations). These S face responses seem to be particularly frequent on card X (94% of the responses to this card), card II (57% of the responses), and card IX (53% of the responses to this card).

Concerning the form quality of face responses, the data in Table 2 show that more than half of these responses have a poor form quality (52%), a much higher rate than what would be expected from a Rorschach response in general. Moreover, the percentage of an ordinary form quality is particularly low (29%). For some of the cards it seems that face responses tend to have poor form, such as card X with 94% of the face responses having poor form quality and card III (88%) and card II (61%).

### **Other Characteristics of Face Responses**

The results of an examination of the content of face responses revealed that 15 out of the 230 face responses in the sample (7%) contained a description of a facial expression. These were responses such as “a sad person” (card II; DdS99), “a smiling face” (card X; DdS22), or “a surprised face” (card II; WS). Interestingly, the majority of the face responses containing a facial expression (12 out of 15) had a poor form quality. In addition, 23 responses of the face responses (10%) included a description of the character of the face seen, for example, “a face of an evil person” (card III, D7), “a sympathetic face” (card X; DdS99), or “a benevolent person” (card IX, DS1). The prevalence of poor form quality of these responses is about the same as for face responses in general (48%). Only three face responses contained an adjective referring to the esthetic value of the person seen, for example, “a very ugly person” (card VII, D3).

### **Comparison of Participants Giving Many Face Responses ( $n = 12$ ) and Other Nonpatient Participants ( $n = 235$ )**

A subgroup of participants who gave three or more realistic face responses in their Rorschach protocols ( $n = 12$ ) was compared to those of other nonpatients ( $n = 235$ ) on selected CS Rorschach reflecting self and interpersonal perceptions. In addition, two hypotheses were tested by comparing the SumY variable and the intellectualization index between the two subgroups. The results of these comparisons (Mann-Whitney) are presented on Table 3.

No significant difference were found between the two groups on the intellectualization index (Mann-Whitney  $U = 1291$ ;  $p > .05$ ), but subjects who gave three or more face responses did give more diffused shading responses than other nonpatients with a median of 2.5 in the “many face responses” group and of 1 for the other nonpatients, Mann-Whitney  $U = 685$ ,  $p < .01$ .

Several differences related to self- and interpersonal perception were found between the two groups. Subjects with many face responses gave significantly more morbid contents (MOR), medians being 3 and 1, respectively, Mann-Whitney  $U = 715$ ,  $p < .01$ . They also gave more passive responses than other nonpatients, with a median of 5.5 versus 4, Mann-Whitney  $U = 815$ , while there was no significant difference between the two groups on the number of active responses (Mann-Whitney  $U = 1226$ ,

Table 3. Rorschach variables' comparisons between participants with a high number of realistic face responses and other nonpatients ( $n = 235$ )

Variable	Hd face $\geq 3$ ( $n = 12$ )		Hd face $< 3$ ( $n = 235$ )		Mann-Whitney U
	Median	Mean rank	Median	Mean rank	
Intellectualization	4.50	139.50	3.00	123.21	1291.0
SumY	2.50	184.42	1.00	120.91	685.0**
EGO Index	.31	142.17	.30	123.07	1192.0
Fr + rf	.00	99.21	.00	125.27	1112.5
FD	1.00	145.17	.00	122.92	1156.0
SumV	1.00	141.83	.00	123.09	1196.0
An + Xy	2.00	147.25	1.00	122.81	1131.0
MOR	3.00	181.92	1.00	121.04	715.0**
H	2.00	133.08	2.00	123.54	1301.0
(H) + nonfaceHd + (Hd)	4.00	163.42	3.00	121.99	937.0*
a (active)	5.00	139.33	4.00	123.22	1226.0
p (passive)	5.50	173.58	4.00	121.47	815.0*
SumT	1.00	136.04	.00	123.39	1265.5
Fd	.00	150.29	.00	122.66	1094.5
COP	1.00	145.13	1.00	122.92	1156.5
AG	1.00	166.58	.00	121.83	899.0*
PER	.00	115.79	.00	124.42	1311.5
Isolation Index	.18	114.08	.17	124.51	1291.0

Note. \* $p < .05$ , \*\* $p < .001$ .

*ns*). Subjects in the many-face group also gave more aggressive responses in their Rorschach protocols compared to the other nonpatients subjects (median of 1 response versus 0 responses in a protocol, Mann-Whitney  $U = 899$ ,  $p < .05$ ).

No differences were found between the two groups on the number of pure H responses, but subjects with many-face responses gave more non-full human contents (face responses excluded) (median of 4 and 3, respectively, Mann-Whitney  $U = 937$ ,  $p < .05$ ). The difference between the two groups on the HVI index was not significant ( $\chi^2 = 0.50$ ; *ns*).

## Discussion

This study investigated Rorschach face responses in a nonpatient reference sample ( $n = 247$ ) in France. We suggest that, although the Rorschach literature has always considered the human face responses as a

detail or part human contents, this category of responses might have a different significance both perceptually and clinically than the other human-detail responses.

Research on face perception as well as our own experience teach us that there is a special quality to the image of the human face. Faces are perceived as a whole gestalt, and it is sufficient for us to recognize people just by looking at their faces. Moreover, people seem to be biased to attending to faces (Palermo & Rhodes, 2007). Newborns show a preference for a face stimulus from a very early age (Morton & Jonson, 1991), and studies on perception show that faces might have an advantage when competing with other objects (Ro, Russel, & Lavie, 2001). Faces appear to be bound up to identity and occupy a special role in the psychological development of early forms of social interaction and the formation of one's identity.

The results of the analysis of face responses in the nonpatient reference sample show that face responses appear in half of the Rorschach protocols; faces form almost half of all the Hd responses. In addition, faces and masks together contribute to 80% of the (Hd) responses. The average of the human contents ratio in this sample had a clear tendency to the right side of the ratio, i.e., toward human contents perceived in an imaginary or a segmented form. This is a challenging finding since the sample is a nonpatient one, where we would expect to find more pure H responses than the other human contents. Based on the suggestion that Hd face responses might reflect a more integrative human perception than implied by the Hd category, we propose that it might be useful to investigate a triple human contents ratio to distinguish these responses, namely,  $H:Hdf:(H) + nonfaceHd + (Hd)$ .

Perceptually, most of the face responses in the sample were given to cards VII and X. More than third of them include the white areas of the blot (S responses), and these are mostly seen in the D or Dd areas of the blot. An analysis of the form quality of these responses revealed that half of the face responses have a poor form quality. This very high ratio might imply that participants tended to see faces even when these percepts did not fully coincide with the features of the blot. This finding might be in line with the results of face-perception research pointing toward the human tendency to "search for faces."

Findings from face perception research could also contribute to the discussion on the frequent face response to card X. In our sample, 18% of the participants gave a face response to card X that includes the middle white space of the blot. According to Exner (2001), this kind of

face response should automatically be coded as having a poor form quality because of the lack of contours. Exner (2001) also mentions that the WS face response to card X in an inverted position is relatively commonplace among adolescents and might occur because “those subjects tend to perceptually close the broken figure” (p. 51).

In fact, the phenomenon of closing a broken figure when perceiving faces is a known phenomenon, called “facial closure” and is a natural human tendency (Wasserstein, Barr, Zappulla, & Rock, 2004). Moreover, contours have only minimal contribution to the identification of faces and figures, and in the Mooney closure faces test (Mooney, 1957) do not have contours at all – and yet are correctly perceived by most normal subjects. It is the inability to achieve closure on the Mooney test figures which is considered abnormal.

This suggests that the poor form considerations, such as whether the percept has clear contours, might not apply when regarding face percepts. If we take into account that the percept on card X is that of a face and that face closure is a natural human tendency, this percept should not be considered a priori of poor form simply because of its lack of contours.

Clinically, face responses might have a special significance. The way by which the face is described can be of great importance for the interpretation. Close analysis of face responses in the French sample shows that sometimes subjects describe the character of the face they perceive or its facial expression. According to Schachtel (1966), facial expression recurrently seen or seen in an original way may be indicative of the attitude subjects expect other people to have toward them.

A possible line for further exploration of the implications of giving many human face responses in a protocol comes from an analysis of a subgroup of nonpatients with a relatively high number of face responses in their Rorschach protocols (three or more Hdf;  $n = 12$ ). This analysis revealed several particularities of this subgroup compared to the other participants in the sample. The hypothesis of Klopfer and Davidson (1962), that face responses are related to an excessive use of intellectualization defenses, was not supported when comparing subjects with many face responses to other nonpatients on the Rorschach Intellectualization Index. Nevertheless, this group had more diffuse shading responses (Sum Y), which may indicate the presence of feelings of helplessness that could manifest by a higher level of anxiety or tension. This result might be in line with the hypothesis that many human detail responses are related to anxiety (Rapaport, 1946; Rausch de Traubenberg, 1970).

Several Rorschach theoreticians have claimed that the high level of anxiety is related to interpersonal relationships and concern about others' attentions (Bohm, 1958; Piotrowski, 1965; Rapaport, 1946; Rausch de Traubenberg, 1970). Findings of the analysis of the "many-faces" subgroup might be in line with this hypothesis: These subjects were found to give an elevated number of responses containing aggressive contents (AG), more morbid responses (with a median of three in a protocol), more passive responses, and more human contents other than whole human responses, faces excluded (a higher sum of [(H) + nonfaceHd + (Hd)]).

These results, when interpreted according to Exner (2003), suggest an interpersonal profile of persons with a high level of feelings of helplessness who have a tendency to perceive interpersonal relationships in a partial or imaginative way, and who tend to be more passive in their relationships. They seem to anticipate that interpersonal exchanges will be marked by aggressiveness, and their self-image seems to include impressions of negative or blemished features.

Although tentative, this suggested profile may be in line with Winnicott's (1971) conceptualization of the mirroring role of the mother's face in the development of the sense of self of the young baby. A Rorschach protocol containing many human face responses might therefore indicate a desperate search for the face of the other, a search to be reflected in the other's face with an accompanying feeling of passivity and helplessness and maybe also anxiety regarding both self-image and the perception of interpersonal interactions. Nasio (2007), a Lacanian psychoanalyst, discusses body image and the role of the mirror; he writes about the face of the other:

The face of the person close to me is a moveable mirror reflecting my image as that person feels it without even being aware of it. When my glance lands on that person's, I immediately feel, in a rather confusing way, the image that person has forged of me. (p. 203)

The search to be reflected in the face of another person could imply a search for identity and a sense of self, accompanied by a feeling of helplessness and dependence on someone else.

More research is needed to investigate these lines of interpretation and to examine Rorschach face responses in other reference samples around the world. Another line of research could be exploring the differences between front face view responses and profile responses, not distinguished in the present study. In addition, it might be interesting to

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investigate face responses in different clinical samples. Spiro and Wein-Spiro (1980), for example, reported differences in human detail responses between three groups of nonpatients, of borderline patients, and of schizophrenic patients. They found that, compared to the other two groups, the schizophrenic group gave more Hd responses that were not faces, while borderline patients had overall more face responses than nonpatients.

### **Conclusions**

The present study focuses on Rorschach face responses and examines these responses in a nonpatient reference sample. The results of this explorative study can point to several possible implications. Distinguishing face responses, Hdf, from other Hd contents might change the ratio of the pure human responses to other segmented or imaginary human contents in a way that would better reflect its rationale and might also have a better discriminative power. Next, the review of current research concerning face perception questions the attribution of poor form quality to the quite frequent face response to card X (which almost reaches the Popular criterion) since it demonstrates that the existence of external contours is not essential to the perception of faces. Finally, face responses may have a special clinical significance for Rorschach interpretation. These are the kind of responses that can be rich with projective material. Many face responses may indicate a need to search for reflection and approval in the other's face with the accompanying feelings distress concerning self-image and interpersonal relations.

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## References

- Behrmann, M., Thomas, C., & Humphreys, K. (2006). Seeing it differently: Visual processing in autism. *Trends in Cognitive Sciences*, *10*, 258–264.
- Bohm, E. (1958). A textbook in Rorschach test diagnosis: For psychologists, physicians and teachers (A. G. Beck & S.J. Beck, Trans.). Oxford: Grune & Stratton. (Original work published 1951).
- Bruce, Y., & Young, A. (1998). *In the eye of the beholder: The science of face perception*. New York: Oxford University Press.
- Bushnell, I.W.R. (2001). Mother's face recognition in newborn infants: Learning and memory. *Infant and Child Development*, *10*, 67–74.
- Chicchetti, D.V. (1994). Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology. *Psychological Assessment*, *6*, 284–290.
- de Heering, A., Houthuys, S., & Rossion, B. (2007). Holistic face processing is mature at 4 years of age: Evidence from the composite face effect. *Journal of Experimental Child Psychology*, *96*, 57–70.
- Exner, J.E., Jr. (2001). *A Rorschach workbook for the comprehensive system* (5th ed.). Asheville, NC: Rorschach Workshops.
- Exner, J.E., Jr. (2003). *The Rorschach: A comprehensive system. Volume 1: Basic foundations and principles of interpretation* (4th ed.). Hoboken, NJ: Wiley.
- Goldberg, D.P. (1978). *Manual of the General Health Questionnaire*. Windsor: NFER-Nelson.
- Hole, G.C. (1994). Configural factors in the perception of unfamiliar faces. *Perception*, *23*, 65–74.
- Klopfer, B., Ainsworth, M.D., Klopfer, W.G., & Holt, R.R. (1954). *Developments in the Rorschach Technique. Volume 1: Technique and theory*. Yonkers-on-Hudson, NY: World Book Co.
- Klopfer, B., & Davidson, H.H. (1962). *The Rorschach technique: An introductory manual*. New York: Harcourt Brace Jovanovich.
- Levinas, E. (1985). Ethics and infinity. (R. A. Cohen, Trans.). Pittsburgh: Duquesne University Press. (Original work published 1982).
- Maurer, D., Le Grand, R., & Mondloch, C.J. (2002). The many faces of configural processing. *Trends in Cognitive Sciences*, *6*, 255–260.
- Meltzoff, A.N., & Moore, M.K. (1983). Newborn infants imitate adult facial gestures. *Child Development*, *54*, 702–709.
- Meltzoff, A.N., & Moore, M.K. (2002). Imitation, memory, and the representation of persons. *Infant Behavior and Development*, *25*, 39–61.
- Meyer, G.J., Erdberg, P., & Shaffer, T.W. (2007). Toward international normative reference data for the Comprehensive System. *Journal of Personality Assessment*, *89*(S1), S201–S216.
- Mooney, C.M. (1957). Age in the development of closure ability in children. *Canadian Journal of Psychology*, *11*, 219–226.

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- Morton, J., & Jonson, M.H. (1991). CONSPEC and CONLERN: A two-process theory of infant face recognition. *Psychological Review*, 98, 164–181.
- Nasio, J.D. (2007). *Mon corps et ses images* [My body and its images]. Paris: Payot.
- Ogden, T.H. (1992). The dialectically constituted/decentered subject of psychoanalysis. II. The contributions of Klein and Winnicott. *International Journal of Psycho-Analysis*, 73, 613–626.
- Palermo, R., & Rhodes, G. (2007). Are you always on my mind? A review of how face perception and attention interact. *Neuropsychologia*, 45, 75–92.
- Piotrowski, Z.A. (1965). *Perceptanalysis*. Philadelphia: Ex libris.
- Rapaport, D. (1946). The Rorschach test. In D. Rapaport, M. Gill, & R. Schafer (Eds.), *Diagnostic psychological testing: The theory, statistical evaluation, and diagnostic application of a battery of tests* (Vol. 2, pp. 85–394). Chicago: The Year Book Publishers.
- Rausch de Traubenberg, N. (1970). *La pratique du Rorschach* [Rorschach practice]. Paris: Presses Universitaires de France.
- Ro, T., Russell, C., & Lavie, N. (2001). Changing faces: A detection advantage in the flicker paradigm. *Psychological Science*, 12, 94–99.
- Rorschach, H. (1942). *Psychodiagnostics: A diagnostics test based on perception*. Bern: Huber. (Original work published 1921).
- Schachtel, E.G. (1966). *Experiential foundations of Rorschach test*. Oxford: Basic Books.
- Schafer, R. (1954). *Psychoanalytic interpretation in Rorschach testing: Theory and application*. Oxford: Grune & Stratton.
- Spiro, R.H., & Wein Spiro, T. (1980). Transitional phenomena and developmental issues in borderline Rorschachs. In J. Kwawer, H. Lerner, P. Lerner, & A. Sugarman (Eds.), *Borderline phenomena and the Rorschach test* (pp. 189–202). New York: International Universities Press.
- Stern, D.N. (1977). *The first relationship: Infant and mother*. Cambridge, MA: Harvard University Press.
- Sultan, S., Andronikof, A., Fouques, D., Lemmel, G., Mormont, C., Réveillère, C., & Saïas, T. (2004). Vers des normes francophones pour le Rorschach en Système Intégré: Premiers résultats sur un échantillon de 146 adultes [Toward French language norms for the Rorschach comprehensive system: Preliminary results in a sample of 146 adults]. *Psychologie Française*, 49, 7–24.
- Sultan, S., Andronikof, A., Réveillère, C., & Lemmel, G. (2006). A Rorschach stability study in a nonpatient adult sample. *Journal of Personality Assessment*, 87, 330–348.
- Sultan, S., & Meyer, G.J. (2009). Does productivity impact the stability of Rorschach scores? *Journal of Personality Assessment*, 91, 480–493.
- Tanaka, J.W., & Farah, M.J. (1993). Parts and wholes in face recognition. *The Quarterly Journal of Experimental Psychology A: Human Experimental Psychology*, 46, 225–245.
- Viglione, D.J., Perry, W., Jansak, D., Meyer, G., & Exner, J.E. (2003). Modifying the

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- Rorschach human experience variable to create the human representational variable. *Journal of Personality Assessment*, 81, 64–73.
- Wasserstein, J., Barr, W. B., Zappulla, R., & Rock, D. (2004). Facial closure: Interrelationship with facial discrimination, other closure tests, and subjective contour illusions. *Neuropsychologia*, 42, 158–163.
- Winnicott, D. W. (1971). *Playing and reality*. London: Tavistock.
- Young, A. W., Hellawell, D., & Hay, D. C. (1987). Configurational information in face perception. *Perception*, 16, 747–759.

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## Summary

The present study explores the Rorschach human face responses in a French nonpatient adult sample ( $n = 247$ ). We suggest that, although the Rorschach literature has always considered the human face responses as a detail human content, this category of responses might have a different signification both perceptually and clinically than other part human responses.

The results of the analysis of face responses in the sample show that almost half of the human detail responses are faces, and that faces and masks form 80% of the fictional human detail responses. Most of the face responses in the sample were given on cards VII and X. An analysis of the Form Quality of these responses revealed that half of the face responses have a poor Form Quality, compared to only one-fifth of the mask responses. The poor form face response in card X is of special interest. 18% of the subjects in the French reference sample give a face response (either Hd or (Hd)) that includes the white space of the blot and that does not have specific contours.

The analysis of a subgroup of nonpatient subjects who gave three or more face responses in their protocols ( $n = 12$ ) revealed that subjects in this subgroup seem to have a higher level of anxiety and a more negative view of themselves; they tend to be more passive in their relationship, perceive others in a nonrealistic way, and expect interactions to be aggressive.

We suggest differentiating face responses from other human detail

contents. This might improve the validity of the human contents ratios, which do not correspond to the American norms in many countries. Based on research on face perception, we suggest reconsidering the Form Quality of the frequent face response to the middle of card X, since the tendency for face closure seems to be a natural human tendency. Clinically, many face responses in a protocol may indicate a desperate search for a mirroring in the other's face with the high anxiety level concerning both the self and others. In addition, a special importance may lie in the description of the face in the response. For future research it would be interesting to examine face responses in other normative studies and in clinical groups.

### Résumé

La présente étude explore les réponses visage au Rorschach dans un échantillon non-consultants français ( $n = 247$ ). Nous suggérons que bien que la littérature sur le Rorschach ait toujours considéré les réponses visage comme un contenu humain incomplet, celles-ci pourraient avoir une signification différente des autres réponses de détail humain au niveau perceptif ainsi que clinique.

Les résultats de l'analyse des réponses visage dans l'échantillon ont montré que près de la moitié des réponses de détails humain étaient des visages et que les réponses masque fournissaient 80% de réponses de détails humain fictionnels. La plupart des réponses visage ont été données aux planches VII et X. L'analyse de la qualité formelle de ces réponses a indiqué que la moitié des réponses visage avait une mauvaise qualité formelle. Par comparaison, seulement un cinquième des réponses masque avaient cette qualité formelle. La réponse visage à la planche X revêt un intérêt particulier. En effet, 18% de sujets dans l'échantillon français ont donné une réponse visage (Hd ou (Hd)) à cette planche qui comportait l'espace blanc de la tache et n'avait pas de contours.

L'analyse d'un sous-groupe de sujets non-consultants qui ont donné trois ou plus réponses visage dans leurs protocoles Rorschach ( $n = 12$ ) a montré que ces sujets semblaient avoir un niveau plus élevé d'anxiété, un regard plus négatif sur eux-mêmes, ainsi qu'une tendance à la passivité dans les relations humaines, et une tendance à percevoir les autres de manière plus irréaliste et à s'attendre à ce que les relations interpersonnelles soient marquées par l'agressivité.

Pour conclure, nous suggérons de distinguer les réponses visage d'aut-

res contenus de détails humain. Cela pourrait améliorer la validité du rapport de contenu humain qui, dans plusieurs pays, ne correspond pas aux normes américaines. Ensuite, en s'appuyant sur la recherche sur la perception des visages, nous suggérons de reconsidérer la qualité formelle de la réponse visage courante à la planche X, car la clôture des images de visage semble être une tendance naturelle de l'être humain. Cliniquement, plusieurs réponses visage au Rorschach pourraient être liées à un besoin d'être reflété dans le visage de l'autre, avec un niveau élevé d'anxiété concernant l'image de soi et les autres. Qui plus est, il pourrait y avoir une importance particulière concernant la description du visage dans la réponse.

Pour la recherche ultérieure il serait intéressant d'examiner les réponses visage dans d'autres études normatives ainsi que dans des échantillons cliniques.

### Resumen

El presente estudio explora las respuestas de *cara humana* en Rorschach en una muestra de no-pacientes franceses adultos ( $n = 247$ ). Se sugiere que, aunque la literatura sobre Rorschach ha considerado siempre las respuestas de *cara* como de contenido humano incompleto (*Hd*), también podrían tener un significado distinto al de las demás respuestas de detalle humano, tanto a nivel perceptivo como clínico.

Los resultados del análisis de las respuestas de *cara* en esta muestra señalan que casi la mitad de respuestas de detalle humano (*Hd*) fueron *caras* y las respuestas de *máscara* representaron el 80% de los contenidos de detalle parahumano (*Hd*). La mayoría de las respuestas de *cara* aparecieron en las Láminas VII y X. El análisis de la calidad formal (*FQ*) de estas respuestas indica que la mitad de los contenidos de *cara* tenía una calidad formal inadecuada. En comparación, sólo un quinto de las respuestas de *máscara* presentaron baja calidad formal. La respuesta de *cara* a la Lámina X presenta un interés especial. En efecto, un 18% de sujetos de la muestra francesa dieron la respuesta *cara*, como *Hd* o como (*Hd*) en esta Lámina, incluyendo en espacio blanco y sin contornos definidos.

El análisis de un subgrupo de sujetos no pacientes que dieron tres o más respuestas de *cara* en su Rorschach ( $n = 12$ ) ha mostrado que estos sujetos parecían presentar niveles más elevados de ansiedad, una percepción más negativa de sí mismos, una mayor tendencia a la pasividad en

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la relación interpersonal, a percibir a los demás de un modo menos realista y a esperar que los vínculos estén marcados por la agresividad.

Para concluir, sugerimos diferenciar las respuestas de *cara* de los demás contenidos de detalle humano. Esta distinción podría mejorar la validez de la relación entre los distintos contenidos humanos que, en muchos países, no se corresponde con los datos normativos americanos. Además, basándonos en las investigaciones sobre la percepción de *caras*, también sugerimos reconsiderar la FQ de la respuesta *cara* a la Lámina X, porque el cierre de las imágenes del rostro parece ser una tendencia natural en el ser humano. Clínicamente, la aparición de varias respuestas de *cara* en un protocolo de Rorschach podría tener relación con el deseo de estar reflejado en el rostro de otro, con un nivel elevado de ansiedad por la propia imagen y los demás. Además, podría tener una especial importancia el análisis de la descripción de la *cara* en cada respuesta que aparezca.

Para investigaciones ulteriores, sería interesante examinar las respuestas de *cara* en otros estudios de datos normativos y en muestras clínicas.

ロールシャッハ・テストにおける人間の顔反応：再考

本研究はフランス人の成人の非患者群（247名）のロールシャッハ法における人間の顔反応を調査したものである。ロールシャッハ法の文献では人間部分反応としての人間の顔反応を考察してきたが、このカテゴリーの反応はおそらく他の部分の人間反応よりも知覚的に、そして同時に臨床的に異なった重要性を有しているかもしれないと我々は考えている。

このサンプルの顔反応の分析の結果、人間の部分反応のほぼ半分が顔反応であり、非現実的な人間部分反応の80%が顔か仮面であった。このサンプルで最も多くの顔反応が産出されたのはVIIカードとXカードであった。これらの反応の形態水準の分析によれば、顔反応の半分は貧しい形態水準を有しており、仮面反応では貧しい形態水準は5分の1だけであった。Xカードの形態水準の低い顔反応は特に興味深く、フランスの参考標本において、18%が空白を含んでおり、特定の輪郭を有していない顔反応（Hdあるいは(Hd)）を示した。

プロトコルに3つ以上の顔反応が認められた非患者群の下位グループ（12名）を分析したところ、このグループの対象者は、より高いレベルの不安を有しており、自らをよりネガティブに見ており、彼らは関係性においてより受け身的であり、他者を非現実的な方法で知覚しており、相互作用は攻撃的であると予想している。

結論を言えば、われわれは顔反応をほかの人間部分反応から差別化することを薦める。これにより人間反応の比率の妥当性が改善されるのではないかと考えられる。この変数は多くの国でアメリカの標準と一致していない。次に顔反応の知覚の研究に基づいて、Xカードの真ん中の領域によく出る顔反応の形態水準を再考することを提言したい。というのは、顔の閉合という傾向は自然な人間の傾向と思えるからである。

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臨床的にはプロトコルに多くの顔反応があるということは、自己と他者の両方に関係する高い水準の不安を伴った他者の顔からミラーリングを求めるといふ絶望的な探索を示唆している。さらに、反応の中の顔の描写は特に重要性があると考えられる。将来の研究により、他の標準的な研究や臨床グループにおいて顔反応が精査されることは興味深いことであろう。