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# Rorschach test in legally sane murderers: a comparison between the comprehensive system (CS) and the Scuola Romana Rorschach (SRR) methods

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**Abstract**

Up to date, in Italy, the Comprehensive System (CS) and the Scuola Romana Rorschach (SRR) are two widely Rorschach systems used in clinical and forensic fields. The present study has the purpose of comparing the results obtained by means of CS and SRR methods in the psychodiagnostic assessment of homicides in a forensic setting. The Rorschach records of 30 murderers with no psychiatric history and without any psychiatric disease according to DSM-5 diagnostic criteria, tested according to the SRR in a forensic setting, and judged as 'fully responsible' (i.e. legally sane), were rescored according to CS. Both methods' results highlighted a mild impairment of cognitive processing as well as marked difficulties in interpersonal relationship with both Rorschach methods. Strong correlations were found (Pearson's r, $p < 0.001$) between CS and SRR variables related to 'cognitive mediation' (CS: XA%, WDA%, X-%, X+%, Xu%; SRR: R+%, F+%, V, O) and interpersonal perception (CS: Human Content, Pure H, Isolation Index; SRR: H, H%, Hd, H+Hd, H%+Hd%).

**Keywords: Murder, Rorschach test, Forensic Psychodiagnostics, Imputability, Ability to understand and want.**

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# Rorschach test in legally sane murderers: a comparison between the comprehensive system (CS) and the Scuola Romana Rorschach (SRR) methods

## 1. Introduction

Psychodiagnostic assessment in forensic field requires a completely different approach compared to that applied in clinical settings. Forensic experts continuously face difficulties in establishing the credibility of what is reported, so that they are forced to devote the greatest attention to what could be source of distortions. So, the issue of truthfulness becomes of paramount relevance (Catanesi & Martino, 2006; Pacente & Grattagliano, 200; Bianchi, 2008). This is even more important and true in the case of the forensic psychodiagnostic assessment of murderers, who are more prone to manipulate clinical and testing data (Martino et al, 2013a; 2013b; Martino et al, 2016). In these cases, self-administered personality questionnaires (MMPI-2, MCMI, PAI and so on), despite the presence of 'control scales' (Cassano & Grattagliano, 2019), are more likely to be altered by subjects who either consciously or unconsciously, for different reasons, tend to either under-report and/or over-report and/or malinger, resulting in unreliable, false or fictitious data (feigning) (Abbate & Storace, 2004; De Fidio & Grattagliano, 2007; Gacono & Evans, 2008; Convertini et al, 2020).

In these conditions, according to EBMPA (Evidence Based Multimethod Psychological Assessment) (Erard & Evans, 2017; Giromini & Zennaro, 2019), the Rorschach test proves to be very useful in circumventing the defences as well as the manipulating and feigning behaviors of the subjects under examination (Giromini & Zennaro, 2019). The availability of psychometrically valid and well standardized methods, will certainly contribute to the increase of the Rorschach diffusion in the field of EBMPA, the Evidence Based Multimethod Psychological Assessment, both for clinical and forensic purposes (Erard & Evans, 2017; Giromini & Zennaro, 2019).

Until 2013, the Rorschach test has stably occupied the third place, immediately after the MMPI and WAIS, among the most widely psychological tests used in forensic psychologic and psychiatric practice (Archer, Buffington-Vollum,Vauter Stredny, & Handel, 2006; Archer &Wheeler, 2013; Hinselroth & Strycker, 2004). More than one third of professionals made systematic use of the Rorschach when assessing criminal subjects' mental status in order to determine whether they are of sound mind and admissible to undergo trial (Archer & Wheeler, 2013). More recent data from an international survey are less favorable, but still the Rorschach ranks ninth for what concerns global forensic assessment, and respectively fourth in child protection, fifth in child custody and seventh in insanity evaluation (Neal & Grisso, 2014). Most recent data from an Italian sample of 110 psychologists show that the Rorschach ranks fifth in malingering assessment (Giromini et al., 2022).

In 2021, the Rorschach test has blowed out its first hundred candles since the publication of Psychodiagnostic (1921, 1942, 1981), the masterpiece of Herman Rorschach (1884-1922), confirming itself as the longest-lived and one of the most used psychodiagnostic tests.

In 2013, the outstanding metanalysis by Mihura, Meyer, Dumitrascu & Bombel, completed the work of refoundation of the psychometric bases of the Rorschach, convincing the most bitter opponents of the first hour (Wood, Garb, Nezworski, Lilienfeld & Duke, 2015) and almost putting an end to the so called 'Rorschach controversy'(Zizolfi, 2016). Despite some recent criticism (Areh et al. 2021), the Rorschach test is not challenged at unusually high rates, when compared to other psychological tests, in the United States and selected European courts (Viglione, et al., 2022).

Up to date, the Italian Rorschach expert can use three different well standardized and psychometrically valid Rorschach methods (Zizolfi, 2016): that by Scuola Romana Rorschach (SRR), the most ancient Rorschach institution in the world, founded in 1938 by Carlo Rizzo (Cicioni, 2016; Rizzo, Parisi, & Pes, 1980); the Comprehensive System (CS) (Abbate & Porcelli, 2017; Exner, 1969, 1974, 1978, 1986, 1991, 1993, 1997, 2003; Exner & Erdberg, 2005; Exner, Porcelli, & Appoggetti, 2001; Lis, Zennaro, Salcuni, Parolin, & Mazzeschi, 2007), and the Rorschach Performance Assessment System (R-PAS), an evolution of CS (Meyer & Viglione, 2011; Meyer, Viglione, Mihura, Erard, & Erdberg, 2013, 2015; Mihura & Meyer, 2018).

The psychological and psychiatric assessment of authors of homicide is of paramount relevance in the forensic practice, so that our group has performed a series of investigations in this field.

Zizolfi, Catanesi, Grattagliano and Zizolfi (2017) examined 20 murderers with no psychiatric history and without any psychiatric disease according to DSM-5 diagnostic criteria, tested according to the SRR in a forensic setting, and judged as 'fully responsible' (i.e. legally sane). The group showed no statistically significant difference from normative SRR control group (Cicioni, 2016; Giambelluca, Parisi & Pes, 1995; Parisi & Pes, 1990a) as regards cognitive functions and reality control (R, R+, R+%, F+%, Reality Index). Major statistically significant differences (Student two tailed t test; level of significance: $p < 0.05$) resulted as regards affective functions, with H (Human) response per cent much lower (mean: 7.75, SD: 1.7; 0.0% in 6/20, < 8.0% in 5/20, < 15.0% in 5/20; normal values:

10-20 in males, 20-30 in females) and Impulsivity Index much higher (mean: 0.79, SD: 0.1; > 1.00 in 6/20, > 0.75 in 4/20; > 0.60 in 4/20; normal value: 0.35), suggesting compromised interpersonal relationships and marked impulsivity. No difference was found between 9 'non impetus crime' and 11 'crime of impetus', the latter characterized by lack of programming and/or peculiar brutality as well as cruelty of the crime.

Grattagliano, Zizolfi, Zizolfi, Valerio, Zecca & Catanesi (2019a) focused on Rorschach variables associated with the judgement of imputability in murderers examined during the trial. According to a retrospective design, they rescored, according to the SRR, the Rorschach of 49 murderers stored in the database of the Criminology and Forensic Psychiatric Hospital Section of Bari University: 43 males and 6 females; 17-67 years old; 24 single, 21 married and 4 separated; 8 without any psychiatric history, 41 with different psychiatric diagnoses (13 schizophrenia, 1 delusional disorder, 1 bipolar disorder, 5 depression, 4 psychorganic syndrome, 13 personality disorder, 4 mild mental disability). Following the court expert evaluation, 23 were recognized as 'mentally sane' and thus imputable, 10 as 'partially mental insane' and 16 as 'totally mental insane' at the time of the crime. As 'totally mental insane' and not imputable were judged: 11 out of 13 schizophrenics, 1 out of 5 depressed, 1 out of 4 with mild mental disability and 2 out of 4 patients with psychorganic disorders. In 14 cases, the homicide was considered as premeditated, in 35 as impulsive and not premeditate. In 31 cases, the crime scene was classified as 'organized', in 16 cases as 'disorganized' (no sufficient data in 2 cases). More than 200 SRR Rorschach indexes were evaluated. The results were statistically analyzed with SPSS (Statistical Package for Social Science, Version 15.0), by means of Student two-tailed t test and by means of chi square test. As a whole, the murderers' group, when compared with SRR normative data (Cicioni, 2016; Giambelluca, Parisi & Pes, 1995; Parisi & Pes, 1990a), showed lower total R (mean: 14.6, SD: 5.6; NV: 20-40), slightly lower R+% (mean: 66.4, SD: 19.5; NV: 70-80), slightly lower F+% (mean: 65.7, SD: 19.2; NV: 60-80), much lower H% (mean: 5.9, SD: 7.5; NV: males, 10-20, females: 20-30), slightly lower Affectivity Index (mean: 031, SD: 0.12; NV: > 0.35), a much lower Reality Index (mean: 3.8, SD: 1.8; NV: 6-8), as well as Self Control Index (mean: 0.12, SD: 1.99; NV: > 1). As a whole, the murderers' group showed a constricted personality (low R), mild cognitive deficiencies (R+%, F+%), reduced interpersonal relationships (H%, Affectivity Index), marked impulsivity (Self Control Index) and improper reality testing (Reality Index). No statistically significant difference was found in the distribution of the judgement of imputability ('mentally sane', 'partially mentally insane', 'totally mentally insane') as regards gender, age, marital status, years of schooling and premeditation of crime. A diagnosis of schizophrenia ($c2 = 21.4583$, $p < 0.05$) and a disorganized crime scene were more frequent in not imputable murderers ($c2 = 13.2238$, $p < 0.05$). As regards Rorschach variables, no difference was found between 23 'Totally sane' and 10 'partially mentally insane'. 16 'totally mentally insane' showed higher F- responses when compared with 23 'totally sane' (mean: 4.06 vs 2.52, SD: 2.57 vs 2.33, $p < 0.05$), and with 10 'partially mentally sane' (4.06 vs 2.10, SD: 2.57 vs 2.08, $p < 0.05$). When 16 'totally mentally insane' were compared with the remaining 33 subjects, two Rorschach variables discriminate in a statistically significant measure: R+% (mean: 58.2 vs 70.3, SD: 17.6 vs 19.4; $p < 0.05$) and F- (mean: 4.06 vs 2.39, SD: 2.57 vs 2.23; $p < 0.05$). In addition, R+% (NV = 70-80) and F+% (NV = 70-80) are higher than 70 only in 4 out of 16 'totally mentally insane', in 7 out of 10 'partially mentally insane' and in 21 out of 23 'mentally sane'. No difference between the three groups was found as regards affective Rorschach variables.

Grattagliano, Zizolfi, Zizolfi, Valerio, Zecca & Catanesi (2019b) revisited the same sample of 49 Rorschach records in order to identify Rorschach variables associated with the dichotomy 'organized crime scene' vs 'disorganized crime scene'. More than 200 SRR Rorschach indexes were evaluated. No statistically significant difference was found in the distribution of the type of crime scene (organized vs disorganized) as regards gender, age, marital status, years of schooling and premeditation of the murder. An organized crime scene was more frequent in imputable and partially insane murderers when compared with non imputable ($c2 = 13.2238$, $p < 0.05$), and in normal subjects when compared with those suffering from a psychiatric disorder ($c2 = 11.4505$, $p < 0.05$). Rorschach records of murderers with 'disorganized crime scenes' (N = 13), when compared with those of murderers with 'organized crime scenes' (N = 31) (Student two-tailed t test) (N = 16), showed a higher total R (mean: 16.6 vs 13.2; SD: 4.7 vs 5.0; $p < 0.05$), higher D (mean: 9.44 vs 6.58; SD: 4.30 vs 3.77; $p < 0.05$), higher Dim% (mean: 2.42 vs 0.84; SD: 3.46 vs 1.19; $p < 0.05$), higher F (mean: 13.25 vs 9.61; SD: 3.62 vs 3.39; $p < 0.05$) and, most important, much higher F- (mean: 4.31 vs 2.12; SD: 2.80 vs 1.75; $p < 0.05$). A value of F- more than twice in murderers leaving a disorganized crime scene, certainly signals lower cognitive abilities, rough observation powers, compromised attention and concentration as well as poor cognitive self control in this group of homicides.

Up to date, no investigation has been performed aiming to compare Rorschach data obtained in the same group of subjects by means of two Rorschach methods, widely used in Italy, in clinical and forensic settings, i.e. the CS and the SRR. The present study aims at highlighting the comparability of results obtained by means of CS and SRR methods in the psychodiagnostic assessment of homicides in a forensic setting.

## 2. Methods

For the purposes of the present study, we re-scored by means of the CS (Abbate & Porcelli, 2017; Meyer, et al.,

2007) the Rorschach records of murderers initially tested in a forensic setting, according to the SRR method.

A consecutive series of 30 Rorschach protocols, administered according to the SRR, was extracted from the database of the Criminology and Forensic Psychiatry Section of Bari University Hospital (N = 22) and from private practice archive in Como (N = 8), satisfying the following inclusion criteria: no psychiatric history, no psychiatric symptom or disease according to DSM-5, forensic judgement of 'fully responsible' (i.e. legally sane).

The Rorschach protocols, collected according to SRR method, were included in the study only if two of us, well experienced in CS (G.I and S.Z., Lecce), judged them as suitable for the CS re-scoring.

All the 30 protocols included in the study, originally administered and scored by different experts, were independently and concordantly re-scored by the authors: two for CS (G.I. and S.Z., Lecce), by means of RAP3TM (Exner, 2001), and two for SRR method (D.Z. and S.Z., Como), by means of RORCOMP (Parisi & Pes, 1990b).

The results were statistically analyzed with SPSS (Statistical Package for Social Science, Version 15.0), by means of Student two-tailed 't' and Pearson r.

SRR results were compared with normative SRR control group (Giambelluca, Parisi & Pes, 1995). CS data were compared with those from the international normal control sample (Abbate & Porcelli, 2017; Meyer, et al., 2007), by means of Student two tailed 't' test (level of significance: $p < 0.05$).

The correlations between CS and SRR variables and indexes were investigated by means of Pearson's product-moment correlation coefficient; only the statistically significant correlations were considered ($p < = 0.001$).

## 3. Results

Table 1 shows mean, standard deviation and minimum-maximum values of the principal Rorschach variables and indexes according to CS in our sample of 30 fully responsible murderers, compared with data from normal controls of the international normative sample. Murderers reported higher values of Lambda (L; mean: 1.57 vs 0.9; $p < 0.001$), Isolation Index (mean: 0.25 vs 0.2; $p < 0.01$), and Distorted Form (X-%; mean: 0.26 vs 0.2; $p < 0.005$). They showed lower values of Experience Stimulation (es; mean: 6.43 vs 9.1; ; $p < 0.005$), Experience Actual (EA; mean: 4.78 vs 6.8; $p < 0.005$), Space (S; mean: 1.57 vs 2.5; $p < 0.05$), Human Content (mean: 4.37 vs 5.8; $p < 0.05$), Pure H (mean: 1.50 vs 2.4; $p < 0.005$), Extended Form Appropriateness (XA%; mean: 0.72 vs 0.8; $p < 0.005$), Form Quality Appropriateness (WDA%; mean: 0.72 vs 0.8; $p < 0.001$), Conventional Form (X+%; mean: 0.44 vs 0.5; $p < 0.005$), Bad Quality Space (S-; mean: 0.50 vs 0.9; $p < 0.001$), Popular (P; mean: 4.23 vs 5.4; $p < 0.001$), Movement Responses (M; mean: 1.90 vs 3.7; $p < 0.001$). As a whole, murderers' group showed a mild impairment of 'cognitive mediation' and 'ideation' variables (XA%, WDA%, X-%, X+%, P, M) and of 'interpersonal perception' variables (Human Content, Pure H, Isolation Index), but the differences, although statistically significant, are small.

Table 2 shows mean, standard deviation and minimum-maximum values of the principal Rorschach variables and indexes according to SRR in our sample of 30 fully responsible murderers, compared with data from normal controls. No significant difference was found, with the only exception of lower Human Content % (mean: 11.06, SD: 11.09; Normal values: 10-20 in males, 20-40 in females) and higher Impulsivity Index (mean: 0.67, SD: 0.40; normal value: 0.35), suggesting compromised interpersonal relationships and marked impulsivity. These results resemble those obtained by means of CS, and they are quite identical to those of the previous study of our group in a similar sample (Zizolfi, Catanesi, Grattagliano & Zizolfi, 2017).

**Table 1 – Rorschach variables and indexes according to CS in a sample of 30 fully responsible murderers**

| CS Rorschach Variables and Indexes | | Murderers (N = 30) | | | Normal Controls* (N = 5185) | | p** |
|---|---|---|---|---|---|---|---|
| | | Mean | SD | Min-Max | Mean | SD | |
| | R | 20.67 | 8.32 | 14-51 | 22.3 | 7.9 | N.S. |
| | L | 1.57 | 1.60 | 0.11-8.00 | 0.9 | 0.9 | < .001 |
| STRESS CONTROL | es | 6.43 | 5.68 | 0-26 | 9.1 | 5.0 | < .005 |
| | Adj.es | 5.20 | 4.05 | 0-17 | --- | --- | --- |
| | EA | 4.78 | 4.15 | 0-19.50 | 6.8 | 3.4 | < .005 |
| | D | -0.60 | 1.16 | -4.00-1.00 | - 0.7 | 1.5 | N.S. |
| | Adj.D | -0.20 | 1.09 | -3.00-2.00 | - 0.2 | 1.2 | N.S. |
| AFFECT | FC | 1.60 | 1.63 | 0-6 | 1.9 | 1.7 | N.S. |
| | CF | 1.80 | 2.09 | 0-9 | 1.6 | 1.6 | N.S. |
| | Pure C | 0.23 | 0.50 | 0-2 | 0.3 | 0.7 | N.S. |
| | Afr | 0.57 | 0.26 | 0.04-1.00 | 0.5 | 0.2 | N.S. |
| | S | 1.57 | 1.72 | 0-7 | 2.5 | 2.1 | < .05 |
| | SumC' | 1.57 | 2.30 | 0-10 | 1.7 | 1.7 | N.S. |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| INTERPERSONAL PERCEPTION | Human Cont | 4.37 | 3.61 | 0-15 | 5.8 | 3.5 | < .05 |
| | Pure H | 1.50 | 1.59 | 0-7 | 2.4 | 1.9 | < .005 |
| | Isolation Index | 0.25 | 0.28 | 0-1.50 | 0.2 | 0.1 | < .01 |
| SELF PERCEPTION | Egocentricity Index | 0.34 | 0.15 | 0-0.57 | --- | --- | --- |
| COGNITIVE MEDIATION | XA% | 0.72 | 1.38 | 0.50-1.00 | 0.8 | 0.1 | < .005 |
| | WDA% | 0.72 | 0.14 | 0.50-1.00 | 0.8 | 0.1 | < .001 |
| | X-% | 0.26 | 0.13 | 0.00-0.47 | 0.2 | 0.1 | < .005 |
| | X+% | 0.44 | 0.17 | 0.14-0.86 | 0.5 | 0.1 | < .005 |
| | Xu% | 0.27 | 0.12 | 0.07-0.50 | 0.3 | 0.1 | N.S. |
| | S- | 0.50 | 0.82 | 0.00-4.00 | 0.9 | 1.1 | < .001 |
| | P | 4.23 | 1.67 | 0-7 | 5.4 | 1.8 | < .001 |
| IDEATION | Intellectualization Index | 1.83 | 2.41 | 0-11 | 2.4 | 2.6 | N.S. |
| | Sum6 | 2.17 | 1.88 | 0-7 | 2.7 | 2.4 | N.S. |
| | WSum6 | 5.20 | 5.66 | 0-20 | 7.6 | 7.7 | N.S. |
| | M | 1.90 | 2.11 | 0-7 | 3.7 | 2.7 | < .001 |
| | Lv2/M-/M none | 0.77 | 1.16 | 0-4 | --- | _---__ | _---__ |
| SPECIAL SCORES | PTI | 1.33 | 1.47 | 0-4 | __---_ | _---__ | _---__ |
| | DEPI | 3.17 | 1.34 | 1-6 | __---_ | _---__ | _---__ |
| | CDI | 3.13 | 1.33 | 1-5 | __---_ | _---__ | _---__ |
| | S-CON | 4.46 | 1.83 | 1-9 | __---_ | _---__ | _---__ |
| | HVI | 1.97 | 0.18 | 1-2 | __---_ | _---__ | _---__ |
| | OBS | 0.00 | 0.00 | 0.00 | __---_ | _---__ | _---__ |

*: International Sample (Abbate & Porcelli, 2017 Meyer, et al., 2007)
**: two-tailed Student 't' test

**Table 2 – Rorschach variables and indexes according to SRR in a sample of 30 fully responsible murderers**

| SRR Rorschach Variables and Indexes | | Murderers (N = 30) | | | Normal Controls* (N = 792) |
|---|---|---|---|---|---|
| | | Mean | SD | Min-Max | Min-Max |
| | R | 22.97 | 10.36 | 13-58 | 20-40 |
| QUALITY | R+ | 16.27 | 7.77 | 8.50-44.00 | // |
| | R+% | 71.48 | 12.25 | 47.80-96.90 | 70-80 |
| | F+ | 11.65 | 6.06 | 4.50-31.00 | // |
| | F+ % | 68.51 | 14.69 | 44.70-100.00 | 70-80 |
| LOCALIZATION | G | 7.40 | 2.92 | 1-13 | // |
| | Gim | 0.50 | 1.01 | 0-4 | // |
| | D | 12.90 | 7.26 | 4-37 | // |
| | Dd | 0.97 | 1.75 | 0-7 | // |
| | Dim | 0.70 | 0.84 | 0-3 | // |
| | Di | 0.17 | 0.53 | 0-2 | // |
| | im | 1.43 | 1.69 | 0-6 | // |
| | G % | 33.97 | 13.55 | 7.10-64.30 | // |
| | Gim % | 1.98 | 4.32 | 0.00-19.00 | // |
| | D % | 55.52 | 15.65 | 19.00-80.00 | // |
| | Dd % | 3.06 | 4.76 | 0.00-17.60 | // |
| | Dim % | 2.91 | 3.53 | 0.00-11.80 | // |
| | Di % | 0.85 | 2.94 | 0.00-14.30 | // |
| | im % | 5.78 | 6.37 | 0.00-23.80 | // |
| DETERMINANTS (Primary) | F | 17.50 | 8.22 | 7-41 | // |
| | M | 1.47 | 1.46 | 0-5 | // |
| | FC | 1.90 | 1.79 | 0-6 | // |
| | CF | 1.72 | 1.71 | 0-6 | // |
| | C | 0.30 | 0.59 | 0-2 | // |
| | FClob + ClobF + Clob | 0.30 | 0.79 | 0-3 | // |
| | F % | 75.39 | 13.39 | 47.60-100.00 | 60-70 |
| | M % | 7.03 | 7.47 | 0.00-27.80 | // |
| | FC % | 8.56 | 7.95 | 0.00-28.60 | // |
| | CF % | 7.14 | 6.64 | 0.00-23.10 | // |

| | | | | | |
|---|---|---|---|---|---|
| | C % | 1.40 | 2.91 | 0.00-10.00 | // |
| | FClob % + ClobF % + Clob % | 0.92 | 2.24 | 0.00-8.80 | // |
| DETERMINANTS (Additional) | ma+m+EF+pM | 3.20 | 3.10 | 0-13 | // |
| | Fc | 0.23 | 0.68 | 0-3 | // |
| | F (c) | 0.83 | 1.26 | 0-5 | // |
| | FC'n+C'nF+C'n | 0.57 | 1.10 | 0-4 | // |
| CONTENTS | H | 2.38 | 2.15 | 0.00-7.50 | // |
| | Hd | 1.30 | 1.76 | 0.00-7.50 | // |
| | H+Hd | 3.68 | 3.02 | 0.00-10.50 | // |
| | A | 8.52 | 4.67 | 0.00-20.50 | // |
| | Ad | 2.18 | 2.62 | 0.00-8.50 | // |
| | A+Ad | 10.70 | 6.22 | 0.00-29.00 | // |
| | Anat | 1.15 | 1.65 | 0.00-6.50 | // |
| | Obj | 1.80 | 1.94 | 0.00-10.00 | // |
| | Sang | 0.40 | 0.80 | 0-3 | // |
| | Geog | 0.80 | 1.30 | 0-6 | // |
| | Foc | 0.60 | 0.70 | 0-2 | // |
| | Cibo | 0.45 | 0.72 | 0-2 | // |
| | Bot | 1.13 | 1.29 | 0-5 | // |
| | H % | 11.06 | 11.09 | 0.00-41.70 | M = 10-20<br>F = 20-30 |
| | Hd % | 5.50 | 6.41 | 0.00-21.40 | // |
| | H+Hd % | 16.60 | 12.33 | 0.00-41.70 | // |
| | A % | 37.94 | 15.83 | 0.00-64.30 | 30-50 |
| | Ad % | 9.11 | 10.00 | 0.00-38.10 | // |
| | A+Ad % | 46.99 | 18.95 | 0.00-87.50 | // |
| | Anat % | 4.33 | 5.66 | 0.00-20.00 | // |
| | Obj % | 7.66 | 5.75 | 0.00-19.00 | // |
| | Sang % | 1.79 | 3.90 | 0.00-15.00 | // |
| | Geog % | 3.90 | 7.21 | 0.00-35.30 | // |
| | Foc % | 2.81 | 3.61 | 0.00-14.30 | // |
| | Cibo % | 1.77 | 3.08 | 0.00-11.10 | // |
| | Bot % | 5.21 | 5.71 | 0.00-17.80 | // |
| FREQUENCY | V | 5.15 | 1.78 | 0.00-8.00 | 5-7 |
| | O | 5.35 | 4.38 | 0.00-16.00 | // |
| | O+ | 0.62 | 1.11 | 0.00-5.00 | // |
| | O+- | 2.05 | 2.29 | 0.00-10.00 | // |
| | O- | 2.68 | 2.53 | 0.00-9.00 | // |
| | V % | 25.09 | 11.97 | 0.00-53.30 | 20-25 |
| | O % | 21.71 | 12.83 | 0.00-44.10 | 2-20 |
| | O+ % | 10.00 | 20.39 | 0.00-100.00 | 70-80 |
| | O+- % | 35.97 | 29.93 | 0.00-100.00 | // |
| | O- % | 44.19 | 33.06 | 0.00-100.00 | // |
| INDEXES | I.I. | 0.67 | 0.40 | 0.17-1.80 | // |
| | I.A. | 0.37 | 0.09 | 0.18-0.53 | > 0.35 |
| | I.R. | 4.53 | 1.83 | 0.00-8.00 | 6-8 |

*: Giambelluca, Parisi & Pes, 1995

Table 3 reports correlations between CS and SRR Rorschach variables in our sample of 30 fully responsible murderers, evaluated by means of Pearson r; only statistically significant correlations were considered (r > .530; p =< 0.001).

Relevant, and statistically significant correlations were found between CS and SRR variables and indexes associated to cognitive mediation and processing, as follows:

- between XA (Extended Form Appropriateness) and: R+% (r = .607, p < 0.001) and F+% (r = .601, p < 0.001);
- between WDA% (Form Quality Appropriateness) and: R+% (r = .629, p < 0.001) and F+ % (r = .622, p < 0.001);
- between X-% (Distorted Form) and: R+% (r = -.551, p < 0.001) and F+% (r = -.554, p < 0.001);
- between X+% (Conventional Form) and: R+% (r = .641, p < 0.001), F+% (r = .588, p < 0.001), V (r = .835, p < 0.001), O (r = -.636, p < 0.001) and O% (r = -.661, p < 0.001);
- between Xu% (Unusual Form) and: V% (r = -.593, p < 0.001).

**Table 3a – Correlations between CS Variables and indexes and SRR variables (Localizations) in a sample of 30 fully responsible murderers (*) (**)**

| CS Rorschach Variables and Indexes | | SRR Rorschach Variables - Localizations | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | R | R+ | R+ % | G | Gim | Gim % | D | Dd | Dim | Dim% | im | im % |
| | R | .954 | .915 | | .629 | | | .828 | .617 | | | | |
| | L | | | | | | | | | | | | |
| STRESS CONTROL | es | .658 | .722 | | .601 | | | | | | | .757 | |
| | Adj.es | .611 | .653 | | .561 | | | | | | | .629 | |
| | EA | .682 | .736 | | .598 | | | | | | | .683 | |
| | D | | | | | | | | | | | | |
| | Adj.D | | | | | | | | | | | | |
| AFFECT | FC | | | | | | | | | | | | |
| | CF | .536 | .634 | | | | | | | | | .589 | |
| | Pure C | | | | | | | | | | | | |
| | Afr | | | | | | | | | | | | |
| | S | | | | | .668 | .555 | | | .555 | | .885 | .772 |
| | SumC' | .571 | .583 | | .566 | | | | | | | .740 | |
| INTERPERSONAL PERCEPTION | Human Cont | .620 | .705 | | | | | | | | | | |
| | Pure H | | | | | | | | | | | | |
| | Isolation Index | | | | | | | | | | .606 | | |
| SELF PERCEPTION | Egocentricity Index | | | | | | | | | | | | |
| COGNITIVE MEDIATION | XA% | | | .607 | | | | | | | | | |
| | WDA% | | | .629 | | | | | | | | | |
| | X-% | | | -.551 | | | | | | | | | |
| | X+% | | | .641 | | | | | | | | | |
| | Xu% | | | | | | | | | | .570 | | |
| | S- | .554 | .590 | | | | | | | | | .608 | |
| | P | | | | | | | | | | | | |
| IDEATION | Intellectualization Index | .608 | .569 | | | | | | | | | .559 | |
| | Sum6 | .595 | .585 | | | | | | | | | | |
| | WSum6 | .645 | .603 | | | | | | | | | | |
| | M | .566 | .561 | | .579 | | | | | | | | |
| | Lv2/M-/M none | | | | | | | | | | | | |
| SPECIAL SCORES | PTI | | | | | | | | | | | | |
| | DEPI | | | | | | | | | .599 | | .740 | .722 |
| | CDI | | | | | | | | | | | | |
| | S-CON | | | | | | | | | | | | |
| | HVI | | | | | -.655 | -.745 | | | | | | |
| | OBS | | | | | | | | | | | | |

(*): by means of Pearson's r
(**): only statistically significant correlations were reported (p < = 0.001)

**Table 3b – Correlations between CS variables and indexes and SRR variables (Determinants) in a sample of 30 fully responsible murderers (*) (**)**

| CS Rorschach Variables and Indexes | | SRR Rorschach Variables - Determinants | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | F | F+ | F+ % | M | M % | FC | CF | FClob + ClobF + Clob | FClob %+ ClobF %+ Clob % | ma+ m+ pM' + EF | F(c) | FC'n + C'Fn + C'n |
| | R | .890 | .893 | | | | | .614 | .569 | | .571 | | .644 |
| | L | | | | | | | | | | | | |
| STRESS CONTROL | es | | .602 | | | | - | | .727 | .579 | .669 | | .636 |
| | Adj.es | | .583 | | | | | | .762 | .633 | .630 | | .659 |
| | EA | | | | | | .580 | .662 | .575 | | .556 | | .671 |
| | D | | | | | | | | | | | | |
| | Adj.D | | | | | | | | | | | | |
| AFFECT | FC | | | | | | .601 | | | | | | |
| | CF | | | | | | | .586 | .577 | | | | .648 |
| | Pure C | | | | | | .677 | | .680 | | | | .746 |
| | Afr | | | | | | | | | | | | |
| | S | | | | | | | | | | | | |
| | SumC' | | | | | | | | .659 | | | | .738 |
| INTERPERSONAL PERCEPTION | Human Cont | | .627 | | | | | | | | | .672 | |
| | Pure H | | | | .669 | .584 | | | | | .578 | | |
| | Isolation Index | | | | | | | | | | | | |
| SELF PERCEPTION | Egocentricity Index | | | | .579 | | | | | | | | |
| COGNITIVE MEDIATION | XA% | | | .601 | | | | | | | | | |
| | WDA% | | | .622 | | | | | | | | | |
| | X-% | | | -.554 | | | | | | | | | |
| | X+% | | | .588 | | | | | | | | | |
| | Xu% | | | | | | | | | | | | |
| | S- | | | | | | | | | | | | |
| | P | | | | | | | | | | | | |
| IDEATION | Intellectualization Index | | | | | | | | | | | | |
| | Sum6 | | | | | | | | | | .776 | | |
| | WSum6 | | | | | | | | | | .762 | | |
| | M | | | | .747 | .601 | | | | | .573 | | |
| | Lv2/M-/M none | | | | .697 | | | | | | .596 | | |
| SPECIAL SCORES | PTI | | | | | | | | | | | | |
| | DEPI | | | | | | | | | | | | |
| | CDI | | | | | | | | | | | | |
| | S-CON | | | | | | | | .564 | | | | |
| | HVI | | | | | | | | | | | | |
| | OBS | | | | | | | | | | | | |

(*): by means of Pearson's r
(**): only statistically significant correlations were reported (p < = 0.001)

**Table 3c – Correlations between CS variables and indexes and SRR variables (Contents) in a sample of 30 fully responsible murderers (*) (**)**

| CS Rorschach Variables and Indexes | | SRR Rorschach Variables - Contents | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | H | H % | Hd | H + Hd | H% + Hd % | A | A+ Ad | Anat | Obj | Cibo | Geog | Geog % |
| | R | | | .638 | | | .572 | .651 | .575 | | | | |
| | L | | | | | | | | | | | | |
| STRESS CONTROL | es | | | | | | | | | .596 | | | |
| | Adj.es | | | | | | | | | | | | |
| | EA | | | | | | | | | | | | |
| | D | | | | | | | | | | | | |
| | Adj.D | | | | | | | | | | | | |
| AFFECT | FC | | | | | | | | | | | | |
| | CF | | | | | | | | | | | | |
| | Pure C | | | | | | | | | .579 | | | |
| | Afr | | | | | | | | | | | | |
| | S | | | | | | | | | | | | |
| | SumC' | | | | | | | | | .634 | .577 | | |
| INTERPERSONAL PERCEPTION | Human Cont | .741 | | .730 | .954 | .655 | | | | | | | |
| | Pure H | .759 | .636 | | .655 | .537 | | | | | | | |
| | Isolation Index | | | | | | | | | | | .795 | .821 |
| SELF PERCEPTION | Egocentricity Index | .650 | .577 | | .588 | .605 | | | | | | | |
| COGNITIVE MEDIATION | XA% | | | | | | | | | | | | |
| | WDA% | | | | | | | | | | | | |
| | X-% | | | | | | | | | | | | |
| | X+% | | | | | | | | | | | | |
| | Xu% | | | | | | | | | | | | |
| | S- | | | .621 | | | | | | .695 | | | |
| | P | | | | | | | | | | | | |
| IDEATION | Intellectualization Index | | | | | | | | | .566 | | | |
| | Sum6 | | | | | | | | | | | | |
| | WSum6 | .582 | | | | | | | | | | | |
| | M | | | | .795 | | | | | | | | |
| | Lv2/M-/M none | .643 | | | .577 | | | | | | | | |
| SPECIAL SCORES | PTI | | | | | | | | | | | | |
| | DEPI | | | | | | | | | | | | |
| | CDI | | | | .564 | | | | | | | | |
| | S-CON | | | | | | | | | | | | |
| | HVI | | | | | | | | | | | | |
| | OBS | | | | | | | | | | | | |

(*): by means of Pearson's r
(**): only statistically significant correlations were reported (p < = 0.001)

**Table 3d – Correlations between CS variables and indexes and SRR variables (Frequency) and indexes in a sample of 30 fully responsible murderers (*) (**)**

| CS Rorschach Variables and Indexes | | SRR Rorschach Variables – Frequency, Indexes | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | V | V % | O | O % | O+ | O+- | I.I. | I.A. |
| | R | | | .721 | | .698 | | | . |
| | L | | | | | | | | |
| STRESS CONTROL | es | | | .637 | | .759 | .677 | | |
| | Adj.es | | | .653 | | .691 | .686 | | |
| | EA | | | .602 | | .617 | | | |
| | D | | | | | | | | |
| | Adj.D | | | | | | | | |
| AFFECT | FC | | | | | | | | |
| | CF | | | | | | | | |
| | Pure C | | | | | | | | |
| | Afr | | | | | | | -.733 | .785 |
| | S | | | | | | | | |
| | SumC' | | | | | .695 | | | |
| INTERPERSONAL PERCEPTION | Human Cont | | | | | | | | |
| | Pure H | | | | | | | | |
| | Isolation Index | .588 | | | | | | | |
| SELF PERCEPTION | Egocentricity Index | | | | | | | | |
| COGNITIVE MEDIATION | XA% | | | | | | | | |
| | WDA% | | | | | | | | |
| | X-% | | | | | | | | |
| | X+% | | .835 | -.636 | -.661 | | | | |
| | Xu% | | -.593 | | | | | | |
| | S- | | | | | | | | |
| | P | .779 | | | | | | | |
| IDEATION | Intellectualization Index | | | | | .684 | | | |
| | Sum6 | | | .652 | | | .700 | | |
| | WSum6 | | | .671 | | | .687 | | |
| | M | | | | | | | | |
| | Lv2/M-/M none | | | .601 | | | .638 | | |
| SPECIAL SCORES | PTI | | | .600 | | | | | |
| | DEPI | | | | | | | | |
| | CDI | | | | | | | | |
| | S-CON | | | | | | | | |
| | HVI | | | | | | | | |
| | OBS | | | | | | | | |

(*): by means of Pearson's r; (**): only statistically significant correlations were reported (p < = 0.001)

Relevant, and statistically significant correlations were found also between CS and SRR variables and indexes associated to interpersonal relationship, as follows:

- between Human Content and: H (r = .741, p < 0.001), Hd (r = .730, p < 0.001), H+Hd (r = .954, p < 0.001), H%+Hd% (r = .655, p < 0.001);
- between Pure H and: H (r = .759, p < 0.001), H% (r = .636, p < 0.001), H+Hd (r = .655, p < 0.001), H%+Hd% (r = .537, p < 0.001);
- Isolation Index and: Dim% (r = .606, p < 0.001), Geog (r = .795, p < 0.001), Geog% (r = .821, p < 0.001), V (r = .588, p < 0.001).

## 4. Discussion

The CS and the SRR are two widely used Rorschach systems to administer score and interpret the Rorschach, in clinical and forensic settings in Italy.

Up to date, in our knowledge, no investigation has been performed aiming to compare Rorschach data obtained in the same group of protocols and subjects, analyzed by means of both methods.

The two methods are quite different in processing Rorschach data, but, in our opinion, the differences are not so great as regards the way of administration, so that it would not be impossible or basically incorrect to score and process according to CS a Rorschach protocol collected according to SRR, and vice versa.

Furthermore, it is not infrequent, in clinical and forensic settings, the need of scrutinizing a record collected according to CS by a SRR expert, and vice versa.

For these reasons, in the present study, we have rescored, according to CS, a sample of 30 Rorschach records collected according to SRR in a group of 30 murderers with no psychiatric history and without any psychiatric symptoms or disease, which were examined for forensic purposes and judged as legally sane.

The Rorschach protocols, collected according to SRR method, were included in the study only if two of us, well experienced in CS, judged them to be suitable for the rescoring according to CS.

The results were statistically analyzed with SPSS (Statistical Package for Social Science, Version 15.0), by means of Student two-tailed 't' and Pearson r.

SRR results were compared with normative SRR control group (Giambelluca, Parisi & Pes, 1995). CS data were compared with those from the international normal control sample (Abbate & Porcelli, 2017; Meyer, et al., 2007), by means of Student two tailed 't' test (level of significance: $p < 0.05$).

The correlations between CS and SRR variables and indexes were investigated by means of Pearson's product-moment correlation coefficient; only the statistically significant correlations were considered ($p < = 0.001$).

The results highlighted a similar psychodiagnostic picture with both Rorschach methods: a mild impairment of cognitive processing as well as marked difficulties in interpersonal relationship, confirming preliminary previous findings in similar sample of murderers (Zizolfi, Catanesi, Grattagliano & Zizolfi, 2017).

The lower S in murderers as compared with international normal control group is somewhat intriguing: perhaps S responses did not always indicate interpersonal oppositionality (Mihura, et al., 2018), but a repression of oppositive behavior in murderers has been frequently described in forensic setting evaluations (Martino, et al., 2016).

Strong correlations were found (Pearson's r, $p < 0.001$) between CS and SRR variables and indexes associated to cognitive mediation and accuracy of thinking (CS: XA%, WDA%, X-%, X+%, Xu%; SRR: R+%, F+%, V, O) along with interpersonal perception (CS: Human Content, Pure H, Isolation Index; SRR: H, H%, Hd, H+Hd, H%+Hd%).

Our results should be considered as preliminary for two major reasons: the retrospective design, and the limited number of subjects examined. Further studies with larger samples are needed following a better balanced design.

## 5. Conclusions

The literature and scientific research on Rorschach, especially in the forensic field, is constantly evolving, requiring clinicians, consultants and experts to be constantly updated on the results from the research world, in order to better defend their work in the courtrooms, where the use or abuse of tests, especially the Rorschach, can be the subject of heavy criticism for what regards its validity and reliability (Viglione, et al., 2022).

This is not the place to review the use of the Rorschach test in forensic psychology and psychiatry, which would require an extensive and focused investigation, even if concise. Anyways, it must be well kept in mind that a precise and absolute correspondence between Rorschach results and formal standardized psychiatric diagnoses such as by means of DSM-5 or ICD-11 criteria, is not an achievable goal. All we can obtain are Rorschach data configurations more or less compatible with psychiatric clinical conditions and standardized diagnostic pictures, which can help us to either confirm or falsify clinical diagnosis by means of Rorschach variables and indexes which are, for their nature, origin and collection, far different from clinical signs and symptoms. In this respect, the seminal metanalysis of Mihura, Meyer, Dumitrascu & Bombel (2013), has outlined that Rorschach variables and indexes associated to accuracy of perception and thinking are the most valid, thus deserving the utmost attention in the psychodiagnostic assessment in forensic setting, as the 'key variables' in the evaluation of legal capacity as well as of other forensic dimensions, ( Affatati, et al, 2012) (Grattagliano, Zizolfi, Zizolfi, Zecca & Catanesi, 2019a e 2019b).

In order to achieve this goal, it is of absolute need the use of well standardized Rorschach methods, such as CS and SRR within an integrated Evidence Based Multimethod Psychological Assessment (EBMPA) (Erard & Evans, 2017; Giromini & Zennaro, 2019).

In the present study, a comparison was performed between two well standardized and psychometrically valid Rorschach systems, widely used in Italy: the CS and the SRR.

30 Rorschach records collected according to SRR in a group of 30 murderers with no psychiatric history and without any psychiatric symptoms or disease, examined for forensic purposes and judged as legally sane, were rescored according to CS.

The results highlighted a similar psychodiagnostic picture with both Rorschach methods: a mild impairment of cognitive processing as well as marked difficulties in interpersonal relationship, confirming preliminary previous findings in similar sample of murderers (Zizolfi, Catanesi, Grattagliano & Zizolfi, 2017).

The reduced productivity (lower R) confirmed the well known defensive behavior of subjects tested in a forensic setting (Rapaport, Gill, & Shafer, 1968; Pacente, & Grattagliano, 2007; Rogers, 2008; Grattagliano et al, 2019a; Grattagliano et al, 2019b).

Strong correlations were found (Pearson's r, $p < 0.001$) between CS and SRR variables and indexes associated to cognitive mediation and accuracy of thinking (CS: XA%, WDA%, X-%, X+%, Xu%; SRR: R+%, F+%, V, O) along with interpersonal perception (CS: Human Con-

tent, Pure H, Isolation Index; SRR: H, H%, Hd, H+Hd, H%+Hd%).

These results are very interesting because variables and indexes associated to cognitive mediation and accuracy of thinking are, indeed, the most valid and reliable from a psychometric point of view as well as the most significant concerning psychodiagnostic assessment in the forensic field.

Anyway, our results are still preliminary, because of the retrospective design, and the limited number of subjects examined. Further studies with larger samples are needed following a better balanced design.

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