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EDITORIAL
The Case for the COVID-19 Pandemic as a Confounding/Independent Variable: Implications for Psychological Research

Not surprisingly, the COVID-19 pandemic has attracted extensive research attention, evident by the meteoric rise of scholarly works and commentary already reported in the extant research literature (Farmer et al., 2020; Gruber et al., 2020; Kniffin, 2020; Kofman & Garfin, 2020; Pierce et al., 2020; Piotrowski & King, 2020; Sharma & Borah, 2020). Indeed, an online search, conducted on October 10, 2020 in PsycINFO, highlights emerging seminal research (i.e., scholarly articles), with a focus on COVID-19, across a myriad of mental health topics (see table below).

Topic	**Articles in *PsycINFO***
Anxiety	291
Stress	250
Public health	192
Depression	117
Resilience	81
Telehealth	73
Social isolation	68
Social media	66
Caregivers	49
Social support	48
Sleep	47
Loneliness	47
Suicide	32
Elderly	31
Friends	29
PTSD	28
Quality of life	24
Grief	22
Parenting	15
Anger	14
Unemployment	14
Eating disorders	14
Domestic violence	10
Child abuse	10
Nursing homes	10
Social cohesion	6
Substance abuse	6
Dreams	6
Job loss	6
Retirement	4
Homeschooling	3
Dating	3
Remote learning	1
Locus of control	1

Unlike transient traumatic stressful events experienced by human populations such as natural disasters, the Covid-19 pandemic can only be depicted as a chronic, ingrained, ubiquitous stressor that impacts nearly every conceivable feature of our social, psychological, and public health milieu. Moreover, this pandemic's impact will most likely harbor long-lasting effects (Crosby, 2003). Indeed, as a human collective, we seem to be living in an altered universe, enveloped in chaos (Alligood, 1996; Piotrowski, 2020). In terms of

research design, such a biopsychosocial cataclysm on potential human participants cannot be ignored nor rejected outright by scientific investigators in the social sciences.

Thus, I present the proposition that Covid-19 (i.e., the individual experience of COVID-19) needs to be addressed (and measured) as an extraneous variable or covariate in the majority of psychological study designs going forward. Indeed, researchers are already making urgent strides in introducing empirical measures/scales that purport to evaluate the impact of COVID-19 (e.g., Arpaci et al., 2020). Undoubtedly, such assessment techniques will be used to account for COVID-19 as an independent variable measure, particularly as we would expect to find much variability in how individuals view the "meaning" of COVID-19 in their lives (note Osgood et al.'s (1957) text, The Measurement of Meaning).

Extraneous or confounding variables (those irrelevant to the predictor or independent variable) can influence rival or alternative explanations of a study's results and conclusions. Independent variables (and their measurement) are included in research designs, as to ensure to account for their confounding effects. Controlling for extraneous variables is critical to assuring valid causal inferences in scientific investigations. In keeping with rigid standards of scientific investigation, the impact of 'confounding' variables on a host of factors in the mental health field has been addressed by researchers (see Meltzoff & Cooper, 2018, for a review): Classic examples include race, gender, and SES (e.g., Lopez-Vergara et al., 2020; Luepnitz et al., 1982), or salient participant variables. Indeed, recent research has stressed the importance on the role of gender in the study of pandemics (Wenham et al., 2020), as well as studies on aged populations and children in the context of COVID-19 (Monahan et al., 2020).

Historically, investigators have called attention to the potential impact of confounding variables on clinical research findings in the area of psychosomatic effects and medical conditions (Everson-Rose et al., 2004; Stapelberg et al., 2013), medication levels, pain intensity, and psychopathology (e.g., Hu et al., 2019). Perhaps most relevant to the current discussion is the potential impact of confounding effects on the psychometric credibility of psychological measures in investigations on a host of clinical conditions (see Sweet, 1983), a ubiquitous feature of mental health research.

Due to the devastating impact of pandemics on the human condition, COVID-19 surely needs to be considered as having profound 'confounding' effects on participants in future research studies. Thus, COVID-19 could be labeled a covariate or regressor. Indeed, exclusion from a regression model, COVID-19 as a legitimate covariate could bias regression results, dependent on the nature of other independent variables. Accordingly, a modified research design would demand controlling for omitted variable bias (see Dekking, 2005). In addition, an extraneous variable, COVID-19 could be considered as a 'subject' variable since characteristics of study participants such as health status, mental health, or personal attitudes would be salient features (see Everson-Rose et al., 2004; Nicholson & Martelli, 2006).

Hence, when researchers in the future study critical, specific issues such as friendship, social isolation, depression, social relationships, motivational states, stress, employment status, front-line health care professionals—There undoubtedly will be a need to account for individual's views, attitudes, and/or experience with COVID-19. The challenge will be on the assessment or evaluation of COVID-19 effects on study participants. Researchers will need to develop comprehensive measures, extended questionnaires, and/or novel measures, specific to COVID-19 reported in the literature. In fact, a cursory search of the emerging literature has noted development of the COVID-19 Phobia Scale, the COVID-19 Burnout Scale, the Coronavirus Anxiety Scale, among other measures. The status of COVID-19 in the minds of individuals, the experience of dealing and coping with COVID-19, and any direct health impact of the pandemic on significant others will be major focus areas of assessment in the formation of research designs. At the same time, researchers will need to maintain a particular focus on the 'social' impacts of COVID-19, not to mention public health concerns (see Hatchett et al., 2007).

Finally, I would make the case that, unlike transient stressors, the COVID-19 pandemic will instill long-term, deep-seeded effects on the mental life (and behavior) of human populations – not unlike the global traumatic experience of the 1918 Pandemic, the Great Depression, or World War II (Crosby, 2003). Hence,

paramount confounding/extraneous factors related to the coronavirus pandemic will, undoubtedly, need to be considered and accounted for by astute researchers for the foreseeable future. In effect, COVID-19 may propel a paradigm shift in psychological research.

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Issues to Consider Prior to Using the R-PAS in a Forensic Context

Carl B. Gacono and Jason M. Smith

After the sudden death of John Exner (developer of the Comprehensive System; CS; Exner, 1969, 2003), a new scoring system, the Rorschach Performance Assessment System (R-PAS; Meyer, Viglione, Mihura, Erard, & Edberg, 2011) was introduced. While the CS was developed with extensive research over approximately 40 years, this new system has only been studied for approximately fifteen years. When considering its forensic usage, it is essential to understand that CS validity research does not translate directly to R-PAS. One primary reason for the lack of translation is the differing administration procedures. Other factors such as the absence of comparison descriptive group data (non-patient, clinical, & forensic) and internal validity problems with studies utilized in the primary meta-analyses which supports the R-PAS variable selection should be considered in determining the methods admissibility. In this article, we discuss essential issues to consider prior to using the R-PAS in an applied context.

After the premature death of John Exner (developer of the Comprehensive System; CS; Exner, 1969, 2003), a new scoring system, the Rorschach Performance Assessment System (R-PAS; Meyer, Viglione, Mihura, Erard, & Edberg, 2011) was introduced. While the CS was developed with extensive research over approximately 40 years, this new system has only been studied for around fifteen years. For several reasons CS validity research does not translate directly to the R-PAS. A primary reason for the lack of translation is the differing administration procedures.

The R-PAS has been criticized related to its administration procedures (Khadivi, & Evans, 2012; Mattlar, 2011; Ritzler & Sciara, 2010; Smith, 2012), the lack of descriptive comparative data (this article), its use of the international Rorschach norms (Andronikof, 2019; Ritzler & Sciara, 2009; Sciara & Ritzler, 2018), the declaration that it has no cross cultural differences (Andronikof, 2019; Fontan, 2014, 2019; Fontan & Smith, 2018), problems with the indices used (i.e., Complexity, Suicide Constellation; Fontan, 2014; Fontan & Smith, 2018), and the lack of forensic admissibility (Gurley, Piechowski, Sheehan, & Gray, 2014; Kivisto, Gacono, &Medoff, 2013). At this time, these criticisms have not been adequately addressed.

Altered Administration Procedures:

R-PAS administration procedures have created a "Rorschach" distinct from the CS Rorschach. Reportedly, Meyer et al. (2011) conducted initial research on this new procedure and stated the following reasons to accept their new administrations: 1) reduced short and long records 00(smaller SD for R), 2) eased the administration task (stating no need to re-administer), 3) very little effect on variables, 4) better fit for protocols to the norms, and 5) potential for less examiner variation across sites. R-PAS administration requires cards to be "pulled" after four responses. This procedure allows for 40 (range 20-40) to be the highest number of responses possible.

The need for limiting lengthy protocols, is quite likely a straw person "concern." In administering hundreds of Rorschachs, we have never had more than about 1% that required the CS instructions related to lengthy protocols, and not many more that were too "short" (4%). While rates for experienced clinicians who routinely administer the CS Rorschach deserves study, this does not seem to be a legitimate reason for modifying the CS' well thought out administration procedures[1]. As noted by Gacono and Meloy (1994) related to assessing antisocial and psychopathic subjects:

> We have found, contrary to our expectations, that psychopaths generally produce a normative amount of Rorschach responses, at least in a research setting. We have purged our group samples of protocols with less than 14 responses without great heartache, because they were few in number. (p. 5)[2].

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Though Exner (2003) slightly altered the administration through different versions of the CS (and the five American Rorschach systems prior to the CS: Klopfer, Beck, Hertz, Piotrowski, and Rapport-Schafer), his administration instructions were based on an assimilation of the best procedures from the five systems. Exner (1974) stated the CS "closely parallels that of the traditional systems … [and] it is designed to provide the Rorschach community with a common language and a common methodology" (p. 17).

The R-PAS procedures, on the other hand, were, based primarily on concerns with the problems caused by the number of responses influencing the "distributions of other Rorschach variables and confounds their interpretation" and a comparison to the CS instructions (Meyer et al., 2011, p. 409). Specifically, "R-PAS was developed with one of its aims being to better manage the number of responses given to protocols, and thus improve its psychometrics" (Meyer et al., 2020, p. 144). Managing R may or may not improve the general psychometrics (reliability) of the Rorschach. In some cases, it may decrease its validity.

Rather than just the open-ended CS instruction of "What might this be?" the R-PAS also includes these implicit instructions "Try to give two responses… or maybe three, to each card. That is, for each card try to see two different things; possibly three" (Meyer et al., 2011, p. 29). This directive approach is a significant departure from the open-ended CS instructions. The impetus of the R-PAS instructions is to "control" or "manage" rather than to facilitate a client directed process. The existing Holtzman inkblot test provides an alternative Inkblot method for examiners who prefers a more directive, "controlled" approach.

Ironically, in their CS validity meta-analyses, Mihura, Meyer, Dumitrascu, and Bombel (2013), endorse the impact that different administration procedures have on data production as they "excluded results derived from studies employing Rorschach test administration procedures that markedly deviated from standard procedures" (p. 560). R-PAS authors have acknowledged the need to have uniform Rorschach administration procedures (Meyer et al., 2020). Yet, the implications of this concern is seemingly ignored when utilizing statistically manipulated CS administered protocols for promoting the R-PAS validity.

Statistics and meta-analyses have been utilized to justify an absence of meaningful differences among Rorschach administration procedures (Hosseininasab et al., 2019; Meyer et al., 2020; Pianowski, Meyer, de Villemor-Amaral, Zuanazzi, & do Nascimento, 2019). These studies have found some statistical differences which were largely ignored when statistical comparisons of select variables did not produce significantly different quantities. It should be noted that six studies in the meta-analysis did not use exact R-PAS administration manual guidelines (Hosseininasab et al., 2019; Meyer et al., 2020). Also statistics deal with ranges and probabilities and fail to capture, when non-patient protocols are utilized, the multitude of differences that become apparent when the Rorschach is used in clinical samples. This is one reason why understanding the history of a variable's development is essential to selecting variables for inclusion in any system as opposed to using a statistical chopping block.

A study by Hartmann (2001) altered the Exner administration by providing longer instructions prior to administering the test. The instructions were:

> I am going to show you some pictures. There are 10 in all, and none of them resembleanything in particular. They are made by putting ink on a piece of paper, folding it, andpressing the sides together, so that they become figures. Now I would like you to tellme what they look like, remind you of, or make you think of. There is no right orwrong answers. Different people see different things, and I want to know what youthink they might resemble. Tell me everything you see in each picture, and when youhave finished with a card, you may put it down (Hartmann, 2001, p. 462).

At no time did Hartmann instruct the examinee to give a certain amount of responses a la R-PAS administration. In response to this lengthy introduction (instructions) fewer brief protocols were produced when compared to the standard Exner instructions ("What might this be?"); however, she found no significant group Rorschach variable differences between the two instructions. Pianowski et al. (2019) looked at two groups of non-patient protocols and found no differences in CS Rorschach variables when

administering protocols with the CS (N = 50) or R-PAS (N = 50) administration methods. In this study, 53 statistical analyses were done between Rorschach variables from an R-PAS and CS administration. They found that a CS administration had higher means FQ-%, and the R-PAS equivalent of the Affective ratio and lower means on R and FQu% compared to an R-PAS administration. Three other differences were found on variables used only in R-PAS. Instead of specifically hypothesizing what could be different in the two administrations, the large number of comparisons may have resulted in lost data.

Statistical approaches absent the historical rationale (sound theory) utilized in developing the CS instructions are limited by many factors. Significant differences can manifest in clinical samples that were not evident with non-patients. The extent to which alterations in administration procedures impact results in a range of clinical samples, nor the impact of altered administration on important interpretative approaches such as sequence analysis, have not yet been fully assessed (see Meloy, Acklin, Gacono, Murray & Peterson, 1997).

Directive versus opened ended administration instructions initiate distinctly different cognitive test taking sets which can interact with a given personality style in creating significantly different results. The validity of the Rorschach rests on its ability to elucidate different variable pattern of variables dependent on the patients' clinical issues and personality style. How might an individual with a perfectionistic style be impacted by the R-PAS instructions? Does the direct instructional set create a template for judging their performance? What is the impact on a paranoid individual who now has a template for responding? Does a directive approach reduce ambiguity and subsequently impact their anxiety (Y, m)? Will it negate the need for them to end Cards with a Dd; a pattern where the stimulus field is narrowed to make the previously ambiguous, testing experience manageable? Will the Obsessive-Compulsive person feel pressure to conform to the demands of the R-PAS instructions? Or will the structure reduce their anxiety? While the answers to these questions are unknown, what is known is that the CS open ended administration procedures have weathered the test of applied usage, and "work" effectively in eliciting valuable patterns consistent with the theoretical understanding of a multitude of clinical and non-clinical populations (Gacono, 2019; Mattlar, 2011; Ritzler, 2014; Smith, Gacono, Fontan, Cunliffe, & Andronikof, 2020; Smith et al., 2018). The impact of a more directive approach has not yet been demonstrated.

The Rorschach's sensitivity to variations in administration, such as altered lighting, using dirty cards, seating position, etc. has also been demonstrated (Exner, 2003). There is a plethora of social science literature concerning the impact of instructional sets on subsequent performance (McDaniel, Hartman, Whetzel, & Grubb, 2007; McDaniel & Nguyen, 2001). One example from Gacono and Meloy (1994) demonstrates how changing even a single word can significantly impact results. In her dissertation, Margolis (1992) attempted to replicate Gacono and Meloy's (1994) list for scoring AgC. She, however, changed the original research instructions from "Please rate those objects popularly perceived as predatory, dangerous, malevolent, injurious, or harmful", to, "Please rate those objects you perceive to be predatory, dangerous, malevolent, injurious or harmful" (p. 273). By doing so, she evoked a distinctly different cognitive set in the survey participants. Gacono and Meloy's (1994) choice of popular was intentional and meant to be ambiguous. It allowed subjects to rate objects as to what most or many people consider to be aggressive. Respondents could externalize responsibility for their choice, be less likely to assume their answers has any relationship to their own aggression (essential in non-patients where aggression is likely ego-dystonic) and would decrease any concerns about being judged for their answers. Not surprisingly, Margolis' altered instructions produced different results. Statements by the respondents supported the presence of censoring, "other(s) might see these words as being aggressive, I don't see them in that way," and "I must be really aggressive because I checked a lot of the words (Margolis, 1992, p. 41; Gacono & Meloy, 1994, p. 273). In a similar vein comments made by clients taking the R-PAS, "Oh wait, you said I have to give two or three responses" support the contention that a distinct and different (from CS) cognitive set is elicited by R-PAS instructions.

Several early studies examined the impact of altered Rorschach administration procedures on Rorschach production. Blais, Norman, Quintar, and Herzog (1995) found the CS administration showed more color, blends, and shading responses than a Rapaport Rorschach administration. Bornstein, Bonner, Kildow, and McCall (1997), studied an undergraduate population and found no differences between individual and group administered Rorschach protocols; however, they only focused on their non-CS derived ROD score. Might their results have been different in clinical samples? How about psychopathic offenders who might be motivated to conform (females) or rebel (males)? In considering our recent study of psychopathic women, any instructional set that provides a template for comparing one's performance is likely to increase their need to interact with others to aid in regulating emotions and issues with self-worth that manifest during the Rorschach administration[3] . Would these altered instructions create another point from which they can evaluate themselves negatively? Would it increase the production of PERs, Cgs, projection, and other indications of defensiveness? These issues have not been adequately addressed by the R-PAS research. The meaning from the many years of study (with links to theory) that went into developing the CS administration procedures seems to have been ignored. This is just one of the common fallacies (bias) in psychology research that stems from a failure to understand fully, or even ignoring, the history of what precedes one's current "discoveries" (see Chapter 2 in Smith, Gacono, & Cunliffe, in press).

The R-PAS lacks adequate descriptive group data:

Currently, the normative data for R-PAS consists of statically manipulated CS administered protocols (Meyer et al., 2011). A statistical procedure that has been called R-Optimized. This method intends to mimic how a Rorschach protocol would look if it were administered using R-PAS instructions. This method is in contrast to developing descriptive group data based on using R-PAS administration procedures.

The R-PAS manual indicates that the International CS non-patient normative data was utilized (Meyer, Erdberg, & Shaffer, 2007; N = 1396), with a statistical modelling procedure, to mimic a non-patient normative sample that was administered with R-PAS guidelines (N = 640). Sciara and Ritzler (2018) also discussed cautionary notes about the international sample itself:

> (a) the use of inexperienced examiners; (b) the ways sampling might affect generalizability (i.e., questionable selection procedures, insufficient exclusion criteria, inadequate sample size); and (c) the use of less than ideal administration procedures, including the lack of a warmup phase as part of the administration (p. 343).

In order to model the normative data to look like R-Optimized administration protocols 123 protocols administered by students primarily under Don Viglione's supervision using R-PAS administration of patients and non-patients were used in the statistical procedure. This sample consisted of "30 non-patients, 30 chronic but stable schizophrenia patients, 15 adult and 15 adolescent sex offenders, and 33 outpatients" (Meyer et al., 2011, p. 470). Of note, however, there are no comprehensive descriptive data sets of R-PAS administered normative, clinical, or forensic samples.

This can be contrasted with descriptive data contained in The Rorschach Workbook for the Comprehensive System (4th & 5th edition; Exner, 1995, 2001) which includes descriptive CS data for Nonpatient Adults (N=700; also listed by Introversive, Extratensives, and Ambitents), Nonpatient Children and Adolescents (N=1390; also listed by age), Inpatient Schizophrenics (N=320), Inpatient Depressives (N=315), and Character Disorders (N=180). Exner (2007) also provided a new 450 non-patient normative sample.

Directly related to using the Rorschach in a forensic context, descriptive data is available for Conduct Disordered Children (N=72; Gacono, Gacono, & Evans, 2008), Conduct Disordered Adolescents (N=179; Gacono et al., 2008), Antisocial Personality Disordered Women (N=232; Smith et al., in press), Female Psychopaths (N=115; Smith et al., in press), Antisocial Personality Disordered Males (N=108; Gacono et al., 2008), Non-Sexually Offending Psychopathic Males (N=32; Gacono, Meloy& Bridges, 2008), Non-violent Male Pedophiles (N=39; Gacono, Meloy & Bridges, 2008), Sexual Homicide Perpetrators (N=38; Gacono, Meloy& Bridges, 2008), Sexually Offending Females (N= 39; Smith et al., in press), Antisocial

Disordered Schizophrenic Men (N=100; Gacono et al., 2008), Inmates in Forensic Psychiatric Treatment (N=211; Young, Erdberg, & Justice, 2008), three groups of Forensic Outpatients (paranoid schizophrenics N =90, undifferentiated schizophrenics, N = 38, Bipolar patients N=40; Gacono & Gacono, 2008) and Child Custody Litigants (N=728, also presented by gender, Singer, Hoppe, Lee, Olesen, & Walters, 2008).

This translates to 2061 forensic protocols administered with CS procedures (see also Gacono& Evans, 2008; Gacono & Meloy, 1994; Piotrowski, 1996a, 1996b, 1996c, 2007, 2017). The R-PAS has two forensic samples (N=30), 15 adult and 15 adolescent sex offenders (Meyer et al., 2011). Forensic "case" studies, not a substitute for comparative descriptive data, were provided in edited texts by Erard and Evans (2017) and Mihura and Meyer (2018).

Issues with Mihura et al. (2013) Meta-analyses:

The Mihura et al. (2013) meta-analyses played a significant role in determining which variables would be included in the R-PAS. The following guidelines guide the inclusion of a variable in R-PAS if 1) the notion that there needed to be a conceptual association between the code and the interpretation, 2) parsimony, and 3) clinical experience based on experienced practitioners (Meyer et al., 2011). These meta-analyses contained 210 studies; however, not all were used to demonstrate validity for the CS variables. Specifically, Mihura stated, "associations between the Rorschach and self-report measures were not used to determine the validity of Rorschach variables" because "Rorschach studies using self-report measures for validity criteria are typically published in less rigorous journals" (i.e., journal impact factor, Mihura, 2019, p. 171).

When examining all 210 studies within the Mihura et al. (2013) meta-analyses using five criteria (IQ/Education level, R, Lambda/F%, inter-rater reliability, sample size), every article had methodological or internal validity issues that made a full interpretation of their findings problematic (Smith et al., 2018). Four articles only had one issue (1.9%), 17 had two (8.1%), 85 had three (40.5%), 87 had four (41.7%) and 17 had five (8.1%). For example, 51.4% did not provide any statistics for R, 67.1% did not provide this data for Lambda/F%, 9.5% used IQ scores < 80, 34.2% did not include an inter-rater reliability statistic, and 26.7% had a sample size < 20.

Twenty-two (10.5%) of the studies included protocols with less than 14 responses. These older CS Rorschach studies with shortened protocols (current CS guidelines consider that < 14 response protocols may be statistically invalid/unreliable) were included in the Mihura et al. (2013) meta-analyses (Smith et al., 2018). Besides the problem with including low R studies in this type of analyses it should be noted that R-PAS instructions would preclude these protocols from being produced (push for 2 and pull after 4; Meyer et al., 2011).

Smith et al. (2018) also found that of the 210 studies in the Mihura et al. (2013) meta-analyses, only 104 of the 210 (49.5%) studies were research on the Rorschach (validation studies). None met all five Rorschach criteria assessed (appropriate inter-rater reliability, R, Lambda, sample size, and IQ/educational level). Internal validity issues with 90% of the studies examined had three or more issues related to the above criteria. Without this information, one cannot determine whether the statistical procedures in the studies were appropriate and/or whether the findings can be generalized beyond the sample studied.

Contradictions were also noted in how the meta-analyses results were used. For example, the HVI variable was included in R-PAS with little support found in the meta-analyses while the DEPI which had moderate support in the meta-analyses was excluded from R-PAS. Of note, the CS Human Experience score (Hx) was removed from R-PAS based on a statistical chopping block. We found this to be an important indicator of primitive hysteria in psychopathy (female offenders M = 0.84, 35%; female psychopaths M = 1.03, 38%; male offenders M = 0.15; 11%; male psychopaths M = 0.18, 12%, Chapter 3 in Smith et al., in press). This suggests there is some clinical utility for this variable.

Failure to adequately address critics of the R-PAS:

Criticisms of R-PAS have generally been met with statistical analyses that fail to address the conceptual points raised (Smith et al., 2020). Applying statistics without putting them into context is never justified (i.e., Simpson paradox). It may lead to large effect sizes and statistical significance, but the results can still be meaningless (lacking in practical significance and logical soundness; see Chapter 2 in Smith et al., in press; Smith et al., 2020). This over-evaluation of statistical prowess at the expense of conceptual understanding has resulted in the tail (statistics) wagging the dog (sound conceptual driven methodology; Gacono 2019). It can lead to important variables being eliminated without adequate consideration of their historical value within certain clinical populations. There is some truth to the notion that, "There are three kinds of lies: lies, damned lies, and statistics" (unknown). Or, as a colleague, Taka Endo, has stated, "The study of statistics is a method to measure if we are in the right direction not a method of finding the truth." Perhaps, Sigmund Freud said it best, "Those critics who limit their studies to methodological investigations remind me of people who are always polishing their glasses instead of putting them on and seeing with them" (in Reik, 1956, p. 54).

In the interest of clarifying some of the issues with the R-PAS, we requested that the data from the Mihura et al. (2013) study be shared with us so that we might verify the hypothesized Rorschach predictor–criterion associations database, validity coefficients decisions, and interrater reliability for the predictor–criterion associations (Mihura et al., 2013). As Mihura noted in her commentary (2019, p. 179), in the spirit of ethical guidelines and scientific cooperation, we provided her with our data from Smith et al. (2018) for her review and analysis. However, we were denied access to her meta-analyses data. Mihura stated "I (the first author) am using some of the secondary data in new analyses and—in some cases (not all)—it would be difficult or impossible to accurately trace these databases back to their original format and reconfigure a new database." She also stated it was more than five years after publication and that the data we requested would be explained in her reply (it was not; Joni Mihura, Personal Communication, March 17, 2019). This first point is of significant concern--that data used in a significant way to support and promote R-PAS is no longer available. Unlike the issue with sharing the original CS protocols, where there are confidentiality issues, the data from the Mihura et al. meta-analyses have no such constraints.

Finally, the lead creator of R-PAS (Meyer) has discussed similar issues related to other researchers. Meyer (2000) has been critical of "arguments … designed to convince readers of a conclusion, regardless of its accuracy" (p. 77) and stated,

> [others] were not sufficiently careful in their scholarship (e.g., the erroneous citations), were not aware of some key literature on a topic (e.g., the composite variables), presented a limited and slanted portrayal of relevant issues and evidence, … and repeatedly dismissed corrective feedback (p. 77, our bold and italics added).

Meyer also stated,

> As the Rorschach evidence base continues to grow and develop, sound and balanced criticism of the literature will help advance scientific knowledge and applied practice. Conversely, publishing assertions that are known to be wrong or misleading can only serve political purposes that thwart the goals of science and retard genuine evolution in the field (2000, p. 78).

In addition the above issues, the Meyer et al. (2020) have now advocated that during the COVID-19 pandemic, it is acceptable to administer the Rorschach virtually or remotely using the above mentioned Rorschach administration studies, supported by three dissertations on virtual Rorschach administrations (one dissertation was not complete; Berry, 2020; Logid, 2018; Whitehouse, 2019). The numerous modifications to standardized procedures that they are needed to do this make it inappropriate to administer the R-PAS virtually[4] . Remote Rorschach administration is also likely unethical (CSIRA/ARISI , 2020). The results have certainly not been proven to be valid (CSIRA/ARISI[5], 2020). It should be noted that two prominent R-PAS creators, Meyer and Viglione (2008), have previously stated that the "standard CS test administration does not lend itself to automated, computer-adapted administration or to computer

automated scoring" (p. 306, bold emphasis added) in direct contradiction to offering or suggesting virtual administration. This represents another inconsistency between ethical and competent practice and the promotion of R-PAS.

The above information offers a blueprint for challenging the R-PAS should it be used in any forensic context.

1. There are a number of criticisms of R-PAS that have not been as of yet adequately addressed. These include its altered administration procedures (Khadivi, & Evans, 2012; Mattlar, 2011; Ritzler&Sciara, 2010; Smith, 2012), its use of the international Rorschach norms (Andronikof, 2019; Ritzler&Sciara, 2009; Sciara&Ritzler, 2018), the declaration that it has no cross cultural differences (Andronikof, 2019; Fontan, 2014, 2019; Fontan& Smith, 2018), problems with the indices used (i.e., Complexity, Suicide Constellation; Fontan, 2014; Fontan& Smith, 2018), and the lack of forensic admissibility (Gurley et al., 2014; Kivisto et al., 2013).
2. The meta-analysis on R-PAS administration included studies with instructions different from those found in the R-PAS manual (Hosseininasab et al., 2019; Meyer et al., 2020).
3. The R-PAS altered "directive" administration procedures to create a different test than the CS "open ended" administration procedures. Consequently, CS validity does not translate directly to the R-PAS.
4. The R-PAS validity lacks the necessary R-PAS administered comparative descriptive data to be used clinically or forensically. Other than 15 adult and 15 adolescent sex offenders and a few forensic case studies, no forensic samples exist from R-PAS administered protocols.
5. The majority (90%) of the Mihura et al. (2013) CS meta-analyses studies had internal validity issues (Smith et al., 2018, 2020) such as studies did not include IQ/Educational level, did not report R or Lambda statistics, had Rorschach protocols < 14, did not report inter-rater reliability, and had sample sizes less than 20.
6. Statistical approaches used by R-PAS proponents fail to address the conceptual issues raised by R-PAS critics (Smith et al., 2020).
7. The data from the Mihura et al. (2013) meta-analyses that has been used to promote R-PAS is, according to Mihura, no longer available in "their original format."
8. Administering the R-PAS virtually is likely to be unethical (CSIRA/ARISI, 2020).

Given the weight of the above issues, the applied usage of R-PAS is premature and will likely add legitimate grounds for critics of the Rorschach to devalue the test (Piotrowski, 1996a, 1996b, 1996c, 2007, 2017). It will aid in creating one more "straw person" or "apparent" controversy that detractors will use to discredit the Rorschach Method and further influence practitioners to avoid using the Rorschach in forensic contexts. Rather than discarding the use of the Rorschach and the valuable information it provides, however, we recommend that psychologists continue to use the CS in clinical and forensic contexts and increase their sophistication for presenting testimony (Piotrowski, 2007; Wiener, 2008). This is really not a difficult task (Wiener, 2008).

As outlined by Andronikof (2019, p. 9) "a) the validity of the CS has a solid evidence-base which has not been disproved, b) the attempt to discredit its creator is produced by promoters of a competing system, [and] c) the R-PAS, although founded on Exner's work, deviates from and betrays Exner's interpretation principles and is therefore not a continuation or development of the CS." It should also be noted that while many of the CS Rorschach critics of the past two decades were individuals who were not experts in assessment, the Rorschach, or even clinical practice, the majority of those who now criticize R-PAS are Rorschach experts; many of whom have conducted original Rorschach research.

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[1] An "experienced clinician" might be defined as a licensed psychologist who has administered several hundred Rorschach protocols in applied contexts over a reasonable length of time (say 10 years). It would not include student administrators working only in a research setting. Proper rapport frequently reduces the number of protocols that might conclude with < 14 responses.

[2] While "at least in research settings" was included in this statement, most of the protocols throughout the forensic samples where administered in clinical contexts and then included as archival data (Gacono& Evans, 2008). A more accurate statement would be "at least within our forensic samples."

[3] We have found these women (N=115) to manifest primarily extratensive and ambitent styles (Smith et al., in press).

[4] i.e., size of the image, ability to turn the card/image, needing the examiner to see what the person is seeing, possibility using a layperson to help administer, etc.

[5]CS International Rorschach Association/Association Rorschach InternationaleSystèmeIntégré; https://www.csira-arisi.org/

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Moral Disengagement Moderates the Relationship Between Interpersonal Decentering and Aggression Problems in 12-Year-Olds: A Mixed-Method Study

James Coleman, Sharon Rae Jenkins and Courtney Sanders

This study investigated the relationship between social cognitive maturity and aggression in 12-year olds as moderated by moral disengagement. These constructs have often been measured by self-report scales, raising questions of shared method variance, but data from the Berkeley Guidance Study at the Institute of Human Development of the University of California, Berkeley provided three different measurement methods. Interpersonal decentering is a narrative measure of social cognitive maturity akin to perspective-taking and role-taking. Items from the adolescent California Q Sort measured moral disengagement. Aggression ratings were derived from parents' reports of the children's behavioral problems. Interpersonal decentering, moral disengagement, and aggression problems were not significantly correlated. However, moderation analysis showed that children who decentered less maturely, along with those who decentered maturely but were more morally disengaged, had the most severe aggression problems. Those who both decentered more maturely and were less morally disengaged had fewer aggression problems than others.

Aggression among adolescents may have negative effects on their psychological and social development (Cosma, Balazsi, & Băban, 2018), and thus should concern adults involved with their care and education. Much psychological research on this problem has focused on family violence (Knous-Westfall, Ehrensaft, MacDonell, & Cohen, 2012) and peer relationships (Espelage & Holt, 2007), with a smaller amount addressing social cognition. Morally disengaging cognitions have been related to increased likelihood of aggression by allowing offenders to violate their moral standards without guilt or shame (Bandura, 1990). In their sample of 12 to 17 year olds, Bussey, Quinn, and Dobson (2015) found that adolescents' perspective-taking and lower moral disengagement were both related to less aggression, and perspective-taking also moderated the relationship between moral disengagement and aggression. For participants reporting low levels of perspective-taking, moral disengagement was more strongly related to overt aggression than for those reporting high levels of perspective taking. Bussey et al. acknowledged that one limitation of their study was their reliance on self-report scales, which share method variance, for all three constructs.

Social cognitive constructs related to taking the role of the other (Mead, 1934), such as perspective-taking (Piaget, 1972), interpersonal decentering (Feffer, 1959), and role-taking (Enright & Lapsley, 1980) have long been investigated in developmental research. Less often studied are the age at which these skills become effective in practice and the extent to which adolescents utilize these processes spontaneously once they have been attained. To sample these implicit social-cognitive processes without the assumptions and self-presentation biases of self-report scales, interpersonal decentering is scored from spontaneous narratives (Feffer, Leeper, Dobbs, Jenkins, & Perez, 2008; Jenkins, Austin, & Boals, 2013). Interpersonal decentering is the tendency to consider the perspective of others when determining one's own appropriate behavior (Feffer, 1959). Decentering appears a sharp contrast to most morally disengaging behaviors, in which the perpetrator is unable or unwilling to consider how their actions are affecting others. Jenkins, Dobbs, and Leeper (2015) found evidence that less mature interpersonal decentering (i.e., egocentrism) was associated with violence perpetration in a clinical sample of adults.

The present study addressed some limitations of Bussey et al.'s (2015) study, examining the relationship between interpersonal decentering, moral disengagement, and aggression using a narrative construction method, research staff Q Sorts, and parent interviews rather than self-report scales. We sampled a narrower age range (12 year olds) to study early abstract formal operations capacities using measures that did not

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require self-reflection abilities. We predicted that interpersonal decentering maturity would be associated with lower levels of aggression and that moral disengagement would moderate this relationship. The sections that follow describe interpersonal decentering, its relation to aggression, and moral disengagement's role in aggressive behavior.

Interpersonal Decentering:

Feffer and Suchotliff (1966) applied Piaget's concrete and impersonal conceptualization of perspective-taking to interpersonal social cognitive processing. They described interpersonal decentering as a complex of processes necessary for an individual to modify their intended behavior by anticipating the responses of another to that behavior. Those who focus only on their own perspective (egocentrism), without simultaneously considering the perspective of others, will be unlikely to adjust their behavior effectively. People who spontaneously consider the perspective of others are better able to adapt their own behavior to obtain their desired outcome (Leeper, Dobbs, & Jenkins, 2008). To predict another's behavior a person must simultaneously coordinate multiple differentiated perspectives, integrating their own perspective and the perspectives of others (Feffer & Suchotliff, 1966).

Feffer (1959) provided an analysis of the cognitive structuring of social content, required for decentering, by utilizing the Role-Taking Task (RTT). Participants were asked to construct a story describing characters presented in an image and then re-tell the story from the perspective of each character. The decentering ability of participants was measured by the extent to which they co-ordinated well-differentiated perspectives among the characters in the story, with older children responding more consistently and in a more developmentally advanced manner compared to their younger counterparts (reviewed in Enright & Lapsley, 1980). Subsequently, Feffer and Jahelka (1968) developed an implicit thematic apperceptive technique (TAT) scoring system to measure spontaneous decentering. With the TAT method, rather than assessing the level of coordination between different stories, interpersonal decentering maturity is determined by assessing the maturity of relationships and complexity of interactions described between the characters in a single story using the present-day scoring manual (Feffer et al., 2008). TATs instruct participants to tell a story, therefore any role-taking present in the stories may be assumed to be spontaneous and unprompted. Feffer and Jahelka (1968) provided evidence of concurrent validity between the RTT and TAT measures.

With increasing social-cognitive maturity and a growing capacity for abstraction, children can simultaneously process differing internalized perspectives in social situations (Feffer & Suchotliff, 1966). The tendency to take another's perspective or role may be helpful in maintaining relationships (Feffer, 1959, 1967; Feffer & Jahelka, 1968; Lowenherz & Feffer, 1969). Evidence from Jenkins et al. (2015) suggests that adults' perspective-taking deficits may be associated with antisocial behaviors such as physical aggression, as found by Bussey et al. (2015) for adolescents. Prior studies of children and perspective-taking have focused on developmental aspects of decentering (Enright & Lapsley, 1980) but have not examined the consequences of individual differences in decentering maturity within a narrow age range. At age 12, such individual differences may be related somewhat to differing physiological maturation, but there is less heterogeneity in cognitive maturation and social experience than for Bussey et al.'s (2015) 12 to 17 year old.

Decentering in Aggressive Individuals:

Aggression has been defined as an aversively motivated antisocial behavior that often causes physical harm or humiliation to others (Bandura et al., 1975; Baron & Richardson, 1994). To integrate existing theories, Bushman and Anderson (2002) developed their general aggression model (GAM), which is based on the idea that aggression has multiple origins. According to the GAM, inputs may come from both the person and situation to affect their present internal state. The person's internal state produces an appraisal and decision-making process that leads to thoughtful and/or impulsive action (Bushman & Anderson, 2002).

Perspective-taking processes may promote thoughtful action leading to a reduced likelihood of aggression (Bushman & Anderson, 2002).

Similarly, decentering processes may act as a schema that contributes to the appraisal of another's thoughts, feelings or actions, with more mature levels leading to more thoughtful and less impulsive actions, including aggression. Jenkins et al. (2015) found that violent adult perpetrators averaged lower in decentering than nonviolent individuals, so it is possible that aggressive children may use less mature decentering than do the less aggressive. College students who typically decenter less maturely more often rated their interpersonal domineering as a problem area, whereas those who typically decenter more maturely reported more difficulty with being assertive (Authors anonymized, under review). However, Sanders (2019) reported that unmarried college students who decentered more maturely were more involved in intimate partner violence either as perpetrators or as victims compared to those who decentered less maturely. By studying the factors that influence appraisal and decision-making processes it may be possible to understand why people who engage in mature decentering processes might or might not be prone to act aggressively.

Moral Disengagement and Aggression:

Bandura et al. (1975) theorized that aggressive behavior can occur when, through moral disengagement, a person removes the self-censure that ordinarily regulates negative behavior. Through disengagement a person is able to violate their moral standards to eliminate feelings such as guilt that may prevent aggression (Bandura et al.; Bussey et al., 2015). Bandura's (1999) comprehensive article describing the mechanisms by which individuals morally disengage included diffusion or displacement of responsibility; moral justification; advantageous comparison; euphemistic labeling; ignoring, misconstruing, or minimizing consequences; victim blame; and dehumanization.

Recent research suggests that children use moral disengagement to justify aggression. Visconti, Ladd, and Kochenderfer-Lad (2015) used Bandura, Barbaranelli, Caprara, and Pastorelli's (1996) moral disengagement scale and found that children who had a greater tendency to morally disengage were more aggressive. In an early adolescent sample, Meter and Bauman (2018) found that moral disengagement had both direct and indirect effects on bullying. Hymel and Perren (2015) concluded that moral disengagement is a mechanism by which children can exhibit behaviors that violate their standards while claiming to adhere to such standards to avoid feelings of conflict. However, Hymel and Perren also highlighted the need for different methodological and conceptual approaches beyond correlational relationships between self-report scales measuring moral disengagement and aggression. It may be beneficial to use implicit measures and informant reports to investigate the association between decentering and moral disengagement and whether moral disengagement plays a moderating role in determining the strength of relationship between decentering and aggression.

Averill (1983) described how aggression may be controlled imperfectly depending on whether a person has morally disengaged. Bandura's (1999) description of moral disengagement resembles an inability or unwillingness to take another's perspective. For instance, by failing to assign an internal state to another, a perpetrator can dehumanize a victim. By dehumanization perpetrators may weaken their self-censure by perceiving their victim without human qualities like feelings; people reduced to base creatures may be viewed as insensitive to maltreatment (Bandura et al., 1975). However, dehumanization is just one aspect of moral disengagement, and it may be possible for a person to mobilize morally disengaging processes while simultaneously employing mature levels of perspective-taking. The association between moral disengagement and aggression appears to be strong (Bandura, 1999), as does that between decentering and aggression (Jenkins et al., 2015), but further study is required to understand the relationships between interpersonal decentering, morally disengaging behaviors, and overt aggression.

The Present Study:

Interpersonal decentering appears important for the maintenance of healthy relationships (Feffer, 1959, 1967; Feffer & Jahelka, 1968; Lowenherz & Feffer, 1969), and deficits in decentering may facilitate more aggressive behavior (Jenkins et al., 2015), just as Bussey et al. (2015) found for perspective-taking. However, Bussey et al.'s sample ranged in age from 12 to 17, which covers a broad range of social-cognitive maturation, specifically the development of a capacity for abstraction and formal operations. Therefore, this study focused on 12-year olds to capture an earlier point at the transition from concrete to formal operations. Furthermore, Bussey et al. described their perspective-taking construct as related more closely with empathy than is the social-cognitive conceptualization of decentering scored from the RTT and TAT narratives. Bussey et al.'s findings may be difficult to replicate using other ToM constructs, especially if they use different measurement methods, such as the process-focused model described by Bornstein (2011) and the narrative methods described by Jenkins (2017a) used in this study. Bussey et al. highlighted the need for further research investigating additional constructs related to perspective-taking and other methods than self-report scales. Thus, we applied interpersonal decentering, in conjunction with moral disengagement, in place of perspective-taking in their moderator model. Our measure of aggression was also more specific and behavioral than Bussey et al.'s self-report scale since we used parents' reporting of overt aggression problems.

Given that aggression is typically not a desirable behavior, Ferguson and Dyck (2012) argued that there is pressure on scholars to provide an understanding of the origins of aggression and how it may be prevented. Consistent with the GAM, decentering may act as a social-cognitive process that facilitates appropriate nonaggressive behavior by contributing to thoughtful decision making and appraisal processes as well as to empathic capacities, leading to less impulsive action. Results from Jenkins et al. (2015) suggested that the lack of mature decentering may contribute to acts of violence. Due to the small sample size and strong ecological validity, the authors highlighted the need for further research and theory.

Unlike Bussey et al. (2015), this study used moral disengagement as a moderator between decentering and aggression, whereas those authors used perspective-taking as the moderator. We reasoned that conceptualizing moral disengagement as a facilitator for aggressive behavior during a developmentally turbulent period suggested a contrast with a more mature morally constrained condition as the central analysis relating decentering to less aggressive behavior. Resulting evidence may suggest why some early adolescents who are able to take the perspective of others may sometimes act aggressively, perhaps failing to integrate their understanding of concrete social relations with their capacity for navigating abstract moral reasoning.

We examined these issues in a sample of archival data from participants in the well-known longitudinal Berkeley Guidance Study at the University of California, Berkeley, when they were 12 years old. Following Bussey et al. (2015), we reasoned that children of that age should be capable of sufficient moral reasoning for regulation of aggressive behavior. In addition, trustworthy contemporaneous measures of our three constructs of interest were available in the Institute of Human Development archives, as described below.

Our hypotheses first replicated conceptually the findings of Bussey et al. (2015), though we wondered how well the first three hypotheses would be supported without shared method variance. Hypothesis 4 is revised from Bussey et al. as described above.

Hypothesis 1. Children who decenter at lower levels of maturity (i.e., more egocentric) have more problems with aggression than those who decenter more maturely.

Hypothesis 2. Children who decenter at higher levels of maturity will score lower on moral disengagement than those who decenter at lower levels of maturity.

Hypothesis 3. Children who score higher on moral disengagement will have more problems with aggression than those who score lower on moral disengagement.

Hypothesis 4. Scores on moral disengagement will act as a moderator, strengthening the relationship of children's low levels of decentering maturity and high levels of aggression problems.

Method:

Participants:

Participants were part of the Berkeley Guidance Study conducted by the Institute of Human Development at the University of California, Berkeley (Eichorn, 1981). The sample consisted of 48 children (22 boys, 26 girls) who had complete data for the measures to be used from the age 12.5 assessment. They were mostly Caucasian (97%); 67% were born into upper class families, and 33% into the middle class.

Design and Procedure:

The parents of every third child born in the city of Berkeley were invited to participate in the intensive longitudinal Guidance Study of normal child development. Through childhood and adolescence, each child was assessed once or twice a year. Each assessment included extensive family and child data gathered through interviews, observational procedures, medical examinations, and psychological tests. Among these, at age 12.5 clinical research staff administered eight pictures from an early version of the Thematic Apperception Test (some later published by Murray, 1943) to each child. Research staff used the adolescent Q Sort (Block, 1961; Eichorn et al., 1981) to describe the child's personality and interpersonal behaviors based on interviews and archival data. Researchers rated the child's aggression, among other problems, based on an interview with the child's mother about the child's behavior problems.

Measures:

Table 1. Interpersonal Decentering Scoring Categories with Examples

Score	Category description	Examples
1	Undifferentiated relationships	They both wanted the truck so they had a fight. Joshua and Jose went for a walk.
2	Nonreactive directional relationships	Anna told Demarcus a joke.
3	Reactive directional relationships	Anna told Demarcus a joke and he laughed.
4	Interactive directional relationships	Anna told Demarcus a joke and he laughed, so she told another joke.
5	Internalized other, simple representation	Wendi thought about her teacher.
6	Internalized other, surface characteristics	Wendi thought about her teacher's red hair.
7	Internalized other's internal state	Angus remembered his father's disappointment.
8	Internalized other's internalized other	Rachael knew that her younger brother's belief in Santa Claus wouldn't last much longer.
9	Internalized self-other interaction	Darren decided to bring home some flowers for his wife because he knew it would cheer her up.

Interpersonal decentering (Feffer et al., 2008).

To score interpersonal decentering, the scorer divides each story into interaction units, each of which must contain at least two characters interacting, either present in the story or as an internalized representation in another character's thoughts. Each unit is assigned the highest decentering score exhibited in the interaction (see Tables 1 & 2).

Table 2. Examples of Stories Scored for Interpersonal Decentering

Card 1. [The young boy has been *told by his teacher* that he must practice every night,] (2) but he doesn't like playing the violin, [he only keeps playing because *he knows it's what he must do to make his father proud*.] (9) The next day when [the *boy tells his teacher* that he has been practicing *she is very pleased*.] (3)

Highest score = 9 Interaction Units = 3 Average = 14/3 = 4.67

Note. Passages in italics are those that are central to determining the score that follows the bracketed interaction unit.

The lowest score of 1, reflecting no decentering activity, is assigned to undifferentiated relationships where two or more characters are identified only by their similarity. Scores of 2-4 (concrete sequential) are assigned to differentiated characters involved in action-reaction sequences with no internalization. The higher (abstract, internalization) levels of decentering, scored 5-9, contain at least one character(s) represented as the object of another character's thoughts or feelings. Higher scores are given to more complex internalization. The highest score of 9 is given when characters contemplate their own thoughts, feelings or actions in regards to another (e.g., "He decided he would bring home some flowers for his wife because he knew it would cheer her up after a hard day").

Two scores were used: the single highest score for any interaction in any story ('best effort'), and the mean of means score, which is an average of the scores across all interaction units in a story, averaged across stories. Because scores may be expected to differ according to the social roles depicted or readily inferred in the card stimuli (Jenkins, Siefert, & Weber, 2019), the highest or maximal score represents decentering capability under demanding performance conditions, whereas the average score represents typical performance across a variety of situations (Annotti&Teglasi, 2017). Pairs of trained undergraduate scorers who had attained the reliability criterion of rho = .85 with expert-scored practice materials used Feffer et al.'s (2008) manual to score each story independently. Then scores were discussed and discrepancies resolved as a pair to determine consensus scores. Reliability was determined by comparing each person's scores to the consensus, with the latter being used for analysis.

Moral disengagement Q Sort scale:

The adolescent Q Sort (Block, 1961) consists of 104 descriptive items that the sorter organizes into a forced normal distribution of 9 categories (1-3 least characteristic of the person, 4-6, moderately characteristic, and 7-9 most characteristic). This ipsative measurement strategy reduces scale format-related response biases of the kind seen in some self-report scales. Sorting was done by the Guidance Study's raters from archival material for the early adolescent wave (age range 12-14), primarily interviews with parents and the child participant. At least three judges rated each participant. The average intersorter reliability for early adolescence was 0.63 (Eichorn, 1981). Although prototype-based profile-matching strategies for analysis are more common for Q Sort data (e.g., Livson&Peskin, 1967), individual items may also be combined based on content blueprinting to create content-based scales for specific purposes as has commonly been done from the MMPI items.

The Moral Disengagement Q Sort Scale, developed from these items for this study, is based on the moral disengagement mechanisms described by Bandura (1999). Items representative of moral disengagement content domains were identified by the first author, which were then used to determine an individual's use of morally disengaging behaviors. Five Q Sort items were chosen to represent the central content domains of moral disengagement: disregarding or distorting the consequences (#2), advantageous comparisons (#12), attribution of blame (#23), moral justification (#47), and diffusion of responsibility (#70). All five had item-total correlations above .22: #2 ("Behaves in a dependable and responsible way", reverse scored), #12 ("Tends to be self-defensive and blame avoidant"), #23 ("Extra punitive; tends to transfer or project blame"), #47 ("Has a readiness to feel guilty", reverse scored) and #70 ("Has shifting standards, depending

on group and situational pressures"). Judging by item content and low item-total correlations, no Q Sort items suitably represented the domains of displacement of responsibility, dehumanization, or euphemistic labeling. Nevertheless, the resulting Cronbach's alpha was .72, indicating good internal consistency reliability. To determine a person's saliency of moral disengagement, scores from the five items were averaged.

Aggression problems (Macfarlane, Allen &Honzik, 1954):

Research staff interviewed mothers (and occasionally fathers or other caretakers) of study members to identify their children's behavioral problems. Information such as 'attacks others' determined the extent to which a child exhibited aggression problems. The original ratings were made by at least two raters using a 5-point scale with submissiveness and aggression on either end; their ratings were transformed to T-scores and averaged. To eliminate the confounding with submissiveness, ratings below the neutral median were recoded to the median. Although the original ratings distinguished aggression in social relations from intellectual/problem solving situations, submissiveness-aggression in social relations is when decentering maturity is theoretically most influential, so only submissiveness-aggressiveness during social relations was analyzed.

Results:

Descriptive Statistics:

Means of the highest single decentering score (M = 3.90, SD = 2.11) and average of within story averages (M = 2.72, SD = 1.21) fell in the concrete sequential range. The univariate distributions were approximately normal, except for decentering average (leptokurtosis = 2.55, peak at 2) and Aggression (leptokurtosis = 2.55, peak at 48), the latter because most participants did not exhibit notable behavioral aggression problems.

Independent samples t-tests and correlational analyses were used to determine whether any demographic variables needed to be controlled in hypothesis tests. Interestingly, girls decentering more maturely than boys, $t(47) = 2.12$, $p = .04$, for both highest decentering (girls M = 4.48, SD = 2.22, boys M = 3.23, SD = 1.82) and average decentering, $t(42.82) = 2.34$, $p = .025$, (girls M = 3.06, SD = 1.41, boys M = 2.31, SD = .81). Independent samples t-tests revealed no significant gender differences for moral disengagement or aggression problems. No other demographic associations were significant.

Hypotheses Tests:

The first three hypotheses were not supported. Children with more severe aggression problems did not decenter at lower levels of maturity than those with less severe or no noted aggression problems, for decentering high score; $r = .01$, $p = .94$, for decentering average score, $r = .03$, $p = .36$. Children who decentered more maturely did not score lower on moral disengagement than those who decentered less maturely; for decentering high score, $r = .06$, $p = .71$, for decentering average score, $r = .14$, $p = .35$. Those who scored higher on moral disengagement were not more aggressive than those who scored lower; $r = .22$, $p = .13$.

For Hypothesis 4, moral disengagement scores acted as a moderator, strengthening the relationship of low decentering maturity and aggression problems. The moderating effect of moral disengagement on the association between decentering maturity and aggression problems was examined using hierarchical regression, following Bussey et al.'s (2015) strategy. One analysis was conducted for each decentering summary score, first the highest score across the eight stories to look at the child's maximal spontaneous decentering capacity ('best effort'), and second the average score across the eight stories to evaluate the child's typical (cross-situationally generalizable) decentering maturity (Annotti & Teglasi, 2017; Jenkins, 2017b). In both cases, since no significant associations with demographic variables required statistical

control, the decentering score and moral disengagement were both entered on step 1 and the product of their standardized scores centered on 0 was entered on step 2.

For the first regression, testing moral disengagement as a moderator of the role of decentering maximal 'best effort' in reducing aggression problems, neither decentering nor moral disengagement had a significant independent effect on aggression problems, nor did their interaction explain significant additional variance. An early adolescent's decentering at their most mature was not related to their aggression problems regardless of moral disengagement.

In the second regression, which repeated the first analysis but substituted average or 'typical' decentering, moral disengagement played an independent role (ß = .32, $p < .05$) with decentering average in the equation, reaching significance as did the interaction (ß = .38, $p < .02$), both with medium effect size (see Table 3). Decentering average did not add significant unique variance. Upon checking conditional effects there was a significant negative association between decentering average and aggression problems only at the lowest levels of moral disengagement, ß = -4.63, t (3,45) = -2.08, p = .043.

Table 3. Hierarchical regression moderation analyses for aggression problems on decentering and moral disengagement interaction

	Zero-order correlation	Step 1		Step 2	
		B	β	*B*	β
Decentering average score	.03	-.01	-.00	-1.32	-.16
Moral disengagement	.22	1.24	.20	2.00	.32
Interaction	.24			3.04	.38
R^2			.04		.15
R^2 change			.04		.11
+*p*< .10. **p*< .05. ***p*< .01					

At less mature levels of decentering, aggression problems are indistinguishably high regardless of moral disengagement, but these problems are virtually absent for those high in decentering and low in moral disengagement. Thus, for 12 year olds, a) moral disengagement measured by staff Q Sort ratings is a significant independent predictor of parent-reported aggression problems when decentering average and the interaction of the two is considered, and b) typical mature decentering measured by narrative assessment, combined with low moral disengagement, is related to a virtual absence of parent-reported aggression problems.

Discussion:

This study did not support the idea that aggression problem severity in 12-year-old early adolescents is correlated directly with a tendency to morally disengage, or with low perspective-taking (immature decentering) when these constructs are not measured by self-report scales in bivariate analyses. However, consistent with Bussey et al.'s (2015) findings, moderation analysis yielded medium effect sizes supporting the idea that when children both typically use mature decentering processes and are not morally disengaged, they rarely have problems with overt aggression. Those who are narratively more egocentric (typically decenter less maturely) and/or are morally disengaged have the most serious aggression problems. Further, what matters for decentering is not whether they are able to decenter maturely (as determined by the 'best effort' scores), but whether they typically use mature decentering across a variety of situations. Overt aggression is a complex behavior involving multiple variables:a willingness to hurt others, lack of consideration of the effect of one's actions, situational facilitators that spark aggressive

impulses and/or remove usual controls, and internal permissions or disinhibitions. Stable, traitlike decentering as a way to use others' perspectives to shape one's own actions when morally engaged appears to mitigate 12 year olds' problematic aggression.

Although our moderation analysis supported Bussey et al.'s (2015) results, there are several possible reasons why our bivariate hypotheses did not. First, Bussey and colleagues' (2015) sample was aged 12 to 17 while the present study assessed 12 year olds. This restricted age range presumably also limited the range of our variables of interest, and restricted range tends to reduce correlations. Furthermore, perhaps at age 12 neither spontaneous frequent mature decentering nor a capacity for moral engagement is developed sufficiently to inhibit aggression by itself. The mean of both decentering scores is in the concrete sequential range (maximal 'best effort' decentering of 3.92, 'typical' average score of 2.72), and only 14 children had typical scores within the internalization range (5-9). Jenkins et al.'s (2015) adult clinical sample had an average maximal 'best effort' decentering score of 6.9 (severely negatively skewed). Average 'typical' adult scores have ranged from 3.32 to 4.39 in both clinical samples and nonpatient college students (Jenkins et al., 2015; Jenkins & Nowlin, 2018; Jenkins, Siefert, & Weber, 2019; Sanders, 2019). Whereas few adults fail to attain at least one score of 9 in a set of eight stories, such that failing to do so spontaneously is suggestive of impairment (Jenkins & Nowlin, 2018), only four of these 12-year-olds attained this highest score even once.

Apparently too few of our younger sample had attained sufficiently formal operational social cognitive maturity for mentalization-level decentering to emerge in spontaneous social narratives. Apparently the linguistic and social-cognitive competence of most 12-year olds are sufficient for rendering answers to self-report items about perspective-taking (Bussey et al., 2015), but in our sample few routinely mobilized and narrated decentering processes at an internalized level when explaining story characters' behavior. The social cognitive maturation level of these 12-year olds might also explain the differential strength of prediction between the two decentering summary scores. Apparently, what mattered for restraining aggression problems was not the capacity to decenter maturely just once, but the inclination to do so consistently.

Measurement method differences might also explain our discrepant findings from Bussey et al. (2015), who acknowledged that their findings might be due in part to shared method variance among their self-report scales. Our measures that relied on narrative assessment, research staff ratings, and parent informant reports had no shared method variance or social desirability response biases in common. Bussey et al. (2015) used the Mechanisms for Moral Disengagement Survey (Bandura et al., 1996). When children are administered the Moral Disengagement Survey, they respond with their own thought processes, reflecting their belief about their tendency to morally disengage (Bandura, 1996). In contrast, the Moral Disengagement Q Sort used an assessment from the research team based on interview observations and archival file data aggregated over three annual assessments. This broad-spectrum assessment was not originally designed to reflect a child's moral disengagement, removing experimenter confirmation bias. It is also independent of the child's memory, self-concept, and self-presentation biases. Additionally, Bussey et al. (2015) measured overt aggression by adapting Little, Jones, Henrich, and Hawley's (2003) self-report aggression scale that asks adolescents to rate how frequently they acted overtly aggressively in different situations. One possible explanation of Bussey et al.'s findings is that children who were willing to admit being morally disengaged were also more willing to confess aggressive behaviors.

Using interpersonal decentering scored from children's stories to measure social cognitive maturity is a strength of this study. First, it is not subject to the vagaries of memory and self-presentation as are self-report scales. Second, because it samples interpersonal schemas represented in narrative construction about pictured situations (Jenkins, 2017a), it provides individualized information about how children understand these situations. Specifically, it can provide teachers and clinicians information about the conditions under which children do and do not seek to understand others' thoughts and feelings in relation to their own

thoughts, feelings, and actions. This more complex information processing can slow impulsive reactions that can lead to negative emotion, poor self-regulation (Bassan-Diamond, Teglasi, & Schmitt, 1995), and/or aggression, serving an inhibiting function like that of moral engagement. Understanding the relevance to the child of problematic behavior in particular contexts is an important benefit of psychological assessment (Teglasi, 2007; Teglasi, Ritzau, Sanders, Kim, & Scott, 2017). TATs and other 'projective' techniques (see Meyer & Kurtz, 2006) make an important contribution to multimethod psychological assessment batteries (Piotrowski, 2015, 2017).

Third, a recent study of interpersonal problems in adults (Authors anonymized, under review) suggests that using decentering scores in the context of therapeutic assessment (Finn, 2007) might be productive for certain patterns of interpersonal problems. Examining the contents of stories that reflect an aggressive child's hostile attribution bias (in Crick and Dodge's [1994] Social Information Processing model) might focus on 'rewriting the story' to increase the client's use of more mature decentering processes when forming their attributions of others' intent in situations that the client might construe as provocative. Such a model tailored for children could represent an individualized application of Teglasi, Rahill, and Rothman's (2007) peer-group oriented preventive intervention for improving children's social problem solving.

The Q Sort's strength as a non-self-report researcher-rated ipsative measure not subject to social desirability bias is accompanied by limitations. The validity of using these Q Sort items to measure moral disengagement may be questionable because theoretically relevant items were selected post hoc based on content and, although face-valid, were not designed to measure this construct. Furthermore, the limited number of relevant items available means that not all eight domains of the construct were captured. However, the resulting internal consistency reliability of .72 suggests the scores captured a coherent but not overly narrow construct definition.

A further strength of the present study was its measurement of problematic overt aggression as observed and reported by parents based on their knowledge of the child over time. These ratings likely captured a wide variety of situations in which the child may have acted aggressively. The absence of the word "aggression" unless volunteered by the parent likely reduced the possibility of socially desirable responding by parents. This measure could have included biases related to the mother's beliefs about the child, but such biases would not be shared with the Q sort or narrative measures. To be seen as exhibiting an aggressive behavioral problem, children must be described as "Bossy [and] domineering to the point of social non-adaptability." Children who behaved aggressively within a normal range, but not enough for non-adaptability, were identified as not having this problem. One limitation of this global rating is that it did not allow for distinctions such as between reactive and proactive forms of aggression, which might be differently related to other variables (Lee, 2014).

The study's major limitation was its small sample of 48 children. Unfortunately, only this smaller subsample of the Guidance Study was Q Sorted as it is a highly labor-intensive process. The small sample size may have contributed to lower effect sizes and reduced statistical power across analyses, thus limiting detection of smaller effects. Because the Q Sorted subsample had a majority of upper-class Caucasian children, conclusions must be generalized with caution.

The present study demonstrated that early adolescents who both consistently decenter maturely on a spontaneous narrative task and are observed by research staff to be less morally disengaged have fewer problems with aggression than other children. Those who may or may not be disengaged but rely on egocentric social cognitive processes have more severe aggression problems. Future studies at different ages should elaborate on findings that decentering immaturity may facilitate a range and variety of aggressive behavior jointly with or independent of moral disengagement. Further research should explore additional construct formulations and measurement methods that may be used for understanding social cognitive maturity, moral disengagement, and aggression.

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The Complexity of Rorschach Random Protocols: A Fundamental Issue with the Dimensional Approach to the Rorschach

Patrick Fontan and Anne Andronikof

Complexity, the Rorschach 1st factor, is one of the most important components of R-PAS interpretation (Meyer et al., 2011). However, this dimension is problematic on conceptual grounds and has been described as tautological (Meyer, 1992b). In that case, this notion would be unfalsifiable and would appear as unscientific(Popper,1959).In order to study this problem empirically, 98 protocols from the Belgian CS reference sample were submitted to the analysis described in R-PAS manual, replicating *Complexity* main findings. Protocols were then randomly recorded and submitted to the same analysis which yieldedvery similar results. In addition, the Complexity scores of real and randomly rescored protocols were highly correlated. We conclude that Complexity main findings do not depend on data, and its reliability in clinical practice is questionable. Means to deal with the dimensional approach to the Rorschach are discussed and alternatives are proposed.

In the psychological assessment field, the clinical - or even projective – approach is generally opposed to the psychometric and dimensional one. The Rorschach test, in particular, is somehow emblematic of the clinical assessment approach, and remains a popular instrument in clinical practice (Piotrowski, 2015) while statistical procedures and methodological approaches are major topical areas of study in personality assessment (Piotrowski, 2019).

The idea of making these two approaches converge and to apply dimensional models to the Rorschach is not new and has been defended by several authors. The first factor analysis of the Rorschach was carried out as early as 1947, and until 2003 a multivariate analysis of the Rorschach was published every 4 years approximately. (Adcock, 1951; Anderson & Dixon, 1993; Coan, 1956; Costello, 1998; Geertsma, 1962; Hsü, 1947; Mason et al., 1985; Meyer, 1992b; Schori & Thomas, 1972; Shaffer et al., 1981; Wittenborn, 1950; Wood et al., 2003; Zillmer & Vuz, 1995; see Fontan (2014) for a detail review). R-PAS (Meyer et al., 2011) represents a major breakthrough in this field and it is the first Rorschach interpretation system based on a dimensional approach, and specifically on the Complexity model.

Complexity, also known as the Rorschach 1stfactor, is a dimension which is highly correlated with the total number of Rorschach responses (*R*) and substantially correlated with most Rorschach variables. This dimension "emerges consistently in factor analytic research" (Meyer et al., 2011, p.319), which means that this result has often been replicated (Meyer, 1992b; Murstein, 1960; Schori & Thomas, 1972; Wittenborn, 1950; Wood, Krishnamurthy, & Archer, 2003). In R-PAS, the Rorschach "1st factor" is defined statistically as the result of a principal component analysis of all count variables (*R, W, DQo, FC, H* etc.), with a single dimension being extracted. Complexity is also a score which is actually computed in R-PAS and corresponds to the sum of all contents but single animal, all determinants but pure Form responses, ordinary developed responses, two times synthesis between detailed responses and three times synthesis responses in whole or space locations (Meyer et al., 2011, p. 295).This calculation implies that the same weight is given for a simple Whole response on cards I or V (e.g. Bat) and for highly synthetic responses on Card X (e.g. a firework in Paris above the Eiffel Tower), contrary to the CS Z score which takes stimuli properties of the cards into account.

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Key Words: Rorschach, principal component analysis, factor analysis, Problem of R, 1st Factor, Complexity

Complexity is “the best marker of the first factor”, (Meyer et al., 2011, p.319), the correlation being r=0.95 (Meyer et al., 2011, p. 443). There are calculation differences between the Rorschach 1st factor and Complexity; however, conceptually, these two notions are considered equivalent:

> "Because many Rorschach variables are highly correlated with t**he Rorschach 1st factor, which we call Complexity**, we developed a method for adjusting all scores for this factor" (Meyer et al., 2011, p.303, bold types are ours)

According to available evidence, Complexity is described as:

> “An overall index of complexity of processing in that it measures differentiation, integration, and productivity at the response level. Associated with age, education, intelligence, and adaptation. Responding to the test with a high Complexity score means that the person has brought a considerable amount of psychological activity and effort to bear in coping with the demands of the test. Doing so in real life should be associated with more success and flexibility in coping, and a preference for more cognitive activity and energy when responding to challenges.” (Meyer et al., 2011, p. 349).

As the Rorschach 1st factor, Complexity is one of the most important components of R-PAS interpretation, comparable to G on IQ test, or Welsh’s A on the MMPI-2 (Meyer et al., 2011, p. 348). Assessing the level of Complexity of a protocol is “an important prerequisite for all other interpretations” (Meyer et al., p. 324) and when Complexity deviates more than one standard deviation from the mean, it is recommended to adjust all test scores with Complexity (Complexity adjusted scores). Within R-PAS, Complexity appears as a fundamental dimension of personality, in the same way as G is a general dimension of intelligence. However, and despite its importance, this dimension is problematic on conceptual grounds:

> “[the Rorschach 1st factor] reflects the somewhat tautological position that frequent responding leads to increased scoring across all determinants categories” (Meyer, 1992b, p.124)

Tautologies are a form of circular reasoning. According to Wittgenstein (1922), tautologies are propositions which are true for all truth possibilities, they say nothing as they are unconditionally true, they are without sense, and they are not a picture of reality. In simple terms, tautologies are statements which are always true, whatever the data and they have no empirical meaning. Indeed, as the validity of tautologies do not depend on data, these statements cannot have any empirical meaning: they are not a picture of reality. Since, tautologies are true whatever the data; moreover, they are also unfalsifiable.

The statement “frequent responding leads to increased scoring across all determinant categories” (Meyer, 1992b, p. 124) can be generalized to “frequent responding leads to increased scoring across all Rorschach count variables.” From a logical point of view, this statement corresponds to the following implication: if (A) R increases then (B) the total number of codes in a protocol will increase. The truth table of this implication is the following (Table 1):

Table 1: Implication Truth Table

A (R increases)	B (# codes increase)	A -> B
True	True	True
True	False	False
False	True	True
False	False	True

This implication is false in only one case: when R increases while the total number of codes in a protocol does not. Concerning the Rorschach, this event cannot happen; this situation is impossible. Every Rorschach response contains at least five codes (Location, Developmental Quality, Determinant, Form Quality, and Content) and consequently each supplementary response mechanically adds at least five codes to the total number of codes in a protocol (which is self-evident, or… tautological). Consequently, the statement “frequent responding leads to increased scoring across all determinants categories”, cannot be proven false: it is unfalsifiable. According to Popper (1959), unfalsifiable statements are unscientific. It

follows that Complexity – one of the most important components of R-PAS interpretation – might be unscientific. The objective of this paper is to study this logical problem empirically. Two main hypotheses can be derived from the considerations above:

(H1) If Complexity was indeed tautological and would not depend on data, it should be possible to replicate Complexity findings even when using Rorschach randomly scored protocols (true whatever the data).
(H2) If Complexity was indeed tautological and did not have empirical meaning, the Complexity of Rorschach protocols should stay equivalent even if these protocols were randomly re-scored (no empirical meaning).

As mentioned above, the Rorschach 1st factor, or Complexity, "emerges consistently from factor analytic research" (a result frequently replicated). The idea of H1 is to test whether Complexity is a genuine psychological construct depending on data, or if it is rather a statistical artifact. If Complexity was a genuine construct, then the same analysis conducted on real and random data should yield very different results. On the contrary, if Complexity was a statistical artifact, we could expect to replicate findings even in the worst-case scenario by using random data. In addition, if Complexity was a statistical artifact it should not be interpreted as a general personality dimension. The first hypothesis refers to the general structure of Rorschach data as related to sample of participants and is a fundamental issue. In this context, real and random protocols are considered as two separate samples analyzed with the same procedure.

The second hypothesis is related to the practical issues and clinical implications of the Complexity tautological issue. If Complexity does not depend on data, then we could expect the level of Complexity to be equivalent for two very different scorings of the same protocol. So, at the individual level and for a single protocol, if random scoring yields a very similar Complexity score as real and accurate scoring, then the Complexity score would simply appear as unreliable. In this context, real and randomly rescored protocols are matched, and we computed the correlation between the Complexity scores for the two different scorings.

If these hypotheses were refuted, Complexity would not appear as tautological but rather as a genuine psychological construct. On the contrary, if these hypotheses could be corroborated empirically, the tautological nature of Complexity and its unscientific status would be confirmed. As this dimension is one of the most important components of interpretation, this would call for a fundamental reconsideration in our understanding of the Rorschach, or more precisely of its dimensional structure.

Method:

Sample Size:

According to Guadagnoli & Velicer, if "components possess four or more variables with loadings above .60, the pattern may be interpreted whatever the sample size used" (Guadagnoli & Velicer, 1988, p. 274). R-PAS manual reports correlations above .60 with Complexity for the five individually coded variables: number of responses *R* (.79), multiple determinant response *Blend* (0.82), synthesis responses *Sy* (.83), human movement responses *M* (.68) and human contents *SumH* (.70) (All protocols – norm sample) (Meyer et al., 2011, p.466).

Participants:

The Belgian adult non-patient Rorschach CS reference sample was used in this study. Detailed information concerning recruitment procedures, examiners, administration and scoring procedures are available in the original article (Mormont, Thommessen, & Kever, 2007). The Belgian database was used primarily because it is available in CHESSSS (an open-source software for the Rorschach CS) (Fontan et al., 2013), which allowed us to generate random protocols. The original database included 100 participants and 98 were used for this study (one protocol included more than 50 responses and could not be scored in CHESSSS, and one other protocol was found to be a duplicate).

Participants were recruited by graduate psychology students who administered the Comprehensive System under the supervision of senior staff members at the Clinical Psychology Service of the University of Liège. All protocols were administered and scored according to the CS (Exner, 2001) and none had less than 14 responses. Concerning inter-rater reliability, 25 protocols were blindly rescored, and all kappa coefficients were above 0.75 (Table 2), which is considered excellent (Fleiss, Levin, & Paik, 2013).

Table 2: Belgian adult nonpatient sample interrater reliability statistics

Variable	% Agreement	Iota (Kappa)
Location	.99	.98
Developmental Quality	.96	.92
Determinants	.98	.88
Form Quality	.88	.80
Pairs	.99	.97
Contents	.99	.89
Populars	.97	.91
Z Score	.88	.80
All Special Scores	.99	.81

Note. 25 cases of the Belgian sample (25%) were scored independently by two judges

Random Protocols:

The database used in this study includes 98 participants for a total of 2365 responses which were all coded for the following scoring categories (a) Location and Developmental Quality, (b) Determinants, (c) Form Quality, (d) Pairs, (e) Contents, (f) Popular, (g) Z score and (h) Special Scores.Random protocols were generated as follow:

(1) the first protocol (according to participants IDs) is selected from the 98 available,

(2) the scoring of the protocol responses is deleted,

(3)for the first response, a Location and Developmental Quality is randomly selected among the 2365 available responses in the Belgian database (random sampling *with* replacement), then this procedure is repeated for the other scoring categories (Determinants, Form Quality, etc.),

(4) once the first response is rescored for all scoring categories, the protocol second response is randomly rescored in the same manner and so on until every response of the selected protocol are randomly rescored,

(5) these steps are repeated for the second protocol and so on until every protocol in the database are randomly rescored.

This procedure is based on a Bayesian approach in which the probability of occurrence of the different CS codes is not inferred according to a statistical law (e.g., uniform or normal distributions), but rather according to the actual distribution of these codes observed in the Belgian sample (taking into account Rorschach variables distribution issues).

Analysis:

A principal component analysis was conducted on the counts of individually coded variables (i.e., *R, W, D, F, P* etc.) of the real protocols of the Belgian sample. However, some variables of the contents category have been regrouped into broader categories to simplify the results (e.g., Human Contents, see Table 2). In accordance with R-PAS manual, the first unrotated component was extracted (Meyer et al., 2011), and

component scores were saved. The same analysis was replicated on the random protocols. Finally, the correlations between the Complexity score and the Rorschach 1st component (i.e., the so-called "Rorschach 1st factor") of real and random protocols were computed.

Results:

Table 3: Correlations between the 1st Component and Rorschach Variables, Main Findings

Main Findings	Real Protocols	Random Protocols
Correlation between R and 1st Component	.95	.99
Variables significantly correlated with the 1st Component (loading>30)	75%	81%
Variables strongly correlated with the 1st Component (loading>50)	49%	51%

Principal Component Analysis of real protocols:

The first unrotated component of real Rorschach protocols is essentially defined by the total number of responses (R is loaded at 0.95 by this component), and most Rorschach variables are significantly and substantially correlated with this component (Table 3, Annex A). The correlation between Complexity and the Rorschach 1st component of real protocols is r=0.95 (Table 4). R-PAS manual reports a correlation of r=0.95 between these two variables. This result replicates perfectly Complexity main findings.

Principal Component Analysis of random protocols:

The first unrotated component of random Rorschach protocols is essentially defined by the total number of responses (R is loaded at 0.99 by this component), and most Rorschach variables are significantly and substantially correlated with this component (Table 3, Annex A). The correlation between Complexity and the Rorschach 1st component of random protocols was r=0.97 (Table 4). Complexity main findings are replicated even with randomly scored protocols. In these two analyses, real and random protocols were unmatched.

Correlation between the Complexity of real and random protocols:

Table 4: Correlations between the Complexity and the Rorschach 1st Component of real and matched random Rorschach protocols

			Real Protocols		Random Protocols	
		R	Complexity	1st Comp.	Complexity	1st Comp
Real Protocols	R	1				
	Complexity	.82	1			
	1st Comp.	.95	.95	1		
Random Protocols	Complexity	.95	.82	.93	1	
	1st Comp.	.99	.83	.95	.97	1

In the previous analyses, real and random protocols were treated as two distinct datasets. However, random protocols were real protocols which were randomly rescored, so it is possible to associate them pair wise,

and therefore to compute the correlation between Complexity scores of real and matched randomly rescored protocols. It appears that the first component (i.e., the Rorschach "1st factor") of real and random Rorschach protocols is essentially equivalent (r=0.95) and the Complexity score (which is an estimate of the Rorschach 1st component) of real and random protocols are highly correlated (r=0.82; Table 4).

Concerns were raised, in professional congresses, about our randomization procedure, so we decided to generate randomly rescored protocols in a second fashion, using uniform distribution, i.e., choosing codes by rolling dices. The advantage of the first randomization method is to include blends and multiple contents in the random scoring. Taking into account Rorschach variables distribution issues, general frequencies of all codes was similar to real scoring; we simply made codes completely unreliable. On the contrary, the second method include only one determinant and content per response and is based on a radical approach to randomization (rolling dices) ; changing dramatically Rorschach count variables distributions. However, the correlation between Complexity scores were found to be identical (r=.82).

Discussion:

Complexity & science, the problem of R & nature of Rorschach variables:

The logical analysis presented in the introduction as well as the evidence we provided demonstrate Meyer's (1992b) point that the "Rorschach 1st factor" is tautological. It follows that this notion cannot be refuted and thus it is unscientific according to Karl Popper's criteria (1959), as Complexity findings can be replicated even with random and meaningless data.

The statement "frequent responding **leads** to increased scoring across all determinants categories" (Meyer, 1992, p. 124, bold types are ours) includes a form of causation: the tendency to respond to the test would imply higher frequencies among response codes[1]**.**This form of causation is also reflected in the terminology "Rorschach 1st factor". This dimension is not the result of a factor analysis but rather of a component analysis which makes it the "Rorschach 1st component". This point is important because, in the dimensional approach, factors are thought to be explanatory while components are simply descriptive. So the term "Rorschach 1st factor" represents an attempt to explain a fact which is well known with the Rorschach: R is substantially correlated with most Rorschach variables, which is known as "the problem of R" (Cronbach, 1949; Fiske & Baughman, 1953; Meyer, 1992a; Meyer, 1992b; Murstein, 1960; Perry & Kinder, 1990). However, as it is also well known in statistical sciences, correlation does not imply causation. This explanation could be relevant if R was independent from other Rorschach variables, but it is not the case, and each Rorschach response mechanically adds at least five codes to a protocol by definition. This issue is a basic property of the Rorschach test as it is defined. For example, the Harrower Multiple Choice Rorschach Test does not present the problem of R as a single whole response is recorded for each card (Harrower-Erickson & Steiner, 1945). The issue is simply that R and Rorschach variables are not independent variables because of a part-whole relationship. Each Rorschach human, reflection or cooperative response is by nature a Rorschach response; as Rorschach codes are parts of a whole that we call a Rorschach response. At the protocol level, in statistics, these part-whole relationships are called "multi-colinearity". There are major multi-colinearity issues in the Rorschach as R equals to the sum of locations, developmental qualities, primary determinants, form qualities, and primary contents[2]. Neglecting

[1]Also shown in the sentences: « Complex records tend to **trigger** elevations of multiple scores […]. Conversely, simplistic records **generate** suppressions on multiple scores » (Meyer et al. p. 324, bold types are ours)

[2]R =W+D+Dd
R = DQ+ + DQo + DQv + DQv/+
R = FQ+ + FQo + FQu + FQ- + FQnone

these part-whole relationships and treating R as any Rorschach variable as if it was independent (i.e., treating a whole as a part of it) leads to circular reasoning, tautologies, as well as irrefutable and unscientific statements. Basically, Rorschach variables multicollinearity issues perfectly explain the problem of R and a factor analysis trying to explain this problem is (a) unnecessary and (b) impossible to make because of the very multicollinearity issue.Strictly speaking, this means that the "Rorschach 1st factor" simply does not exist.

Clinical implications: Complexity as a psychological construct in personality assessment:

The apparent robustness of the "Rorschach 1st factor", its reproducibility, is misleading, based on a statistical artifact and circular reasoning (tautology, problem of R, multicolinearity issues). The "fact" that the number of codes increases when the number of responses increases is not a fundamental dimension of personality, should it be called "Complexity", but rather simply a basic property of the test as it is defined. Complexity as a construct is not reliable and introduces a confusion between the person who takes the test and the test itself.

This issue becomes more concerning when this dimension, the "Rorschach 1st factor", is considered a fundamental psychological construct, "Complexity", rather than just a problem within the test data. Indeed, with the problem of R, the number of responses given to the Rorschach is considered a confounding variable of the test interpretation. Consequently, with the Complexity model, one of the most important components of R-PAS (and personality…) would be essentially defined by a confounding variable, and the Rorschach should not be considered as reliable. In addition, this potentially fundamental dimension of personality would be sensitive to psychologist manipulations as it is possible to ask for supplementary responses and to pull out cards during administration (in the CS and even more with R-PAS R-Optimized procedure). Finally, and as demonstrated in this study, two psychologists scoring the same protocol might be in strong disagreement and still find similar values of Complexity (i.e., agree concerning one of the most important components of interpretation despite strong disagreement in the scoring).

Basically, our results demonstrate that the Complexity score has little to do with the properties of the responses given by people taking the test.Consequently, we highly recommend for psychologists using R-PAS not to draw any clinical inferences based on Complexity scores.

Implications for the CS and R-PAS:

It might be argued that the problem raised in this paper impacts the CS and R-PAS in equal proportions, but this is not the case. Indeed, the problem of R is the same in the CS and R-PAS. However, the Complexity model, the "Rorschach 1st factor" is not included in the CS. If this dimensional model corresponded to a genuine psychological construct, then potential issues with this construct would apply to the CS and R-PAS equally. However, we demonstrated in this paper that this model is not reliable and that it should not be used to interpret Rorschach data. As the CS was not designed with a dimensional approach and does not include the Complexity model, the issue raised in this paper impacts R-PAS but not the CS. In spite of these considerations, the issues presented in this paper raise a more general question: is the dimensional approach relevant to the Rorschach?

Reductionism and under extraction:

The dimensional approach is a very important trend in psychology since the early 20th century (e.g., Spearman, 1904) until today and it is legitimate to wonder if this approach is relevant to Rorschach data.

R = Sum of Primary Determinants

R = Sum of Primary Contents

Basically, this approach aims to analyze a complex pattern of inter-correlation between variables and to reduce it to a "simple pattern" of most significant dimensions (it summarizes the data). This approach has been very substantially developed and many different techniques are available. Therefore, the dimensional analysis of data requires a researcher to make a certain number of methodological choices: extraction method (principal component, principal axis, maximum likelihood, etc.), number of dimensions to retain, rotation method (orthogonal, varimax, oblique, oblimin, promax etc.), cutoff for significant loadings depending on number of significant variables per dimension and sample size, method for score calculation (regression, Bartlett, Aderson-Rubbin). Among these different choices, the number of dimensions to retain appears to be a "key question" (Courtney, 2013), a "critical component" (Hayton et al., 2004), a "crucial decision" (Jelaska et al., 2012) and the "most critical decision" (Zwick & Velicer, 1986). Retaining the wrong number of dimensions leads to underextraction (too few dimensions retained) or overextraction (too many). The impact of over- and underextraction on factor and component analyses has been studied in Monte Carlo studies (i.e., data analyses simulation). Overall, authors agree that (1) the accurate determination of the number of dimensions is critical, (2) though overextraction is not desirable ; underextraction is a much more severe problem than overextraction, and (3) underextraction muddies genuine dimensions with inappropriate loadings (Fava &Velicer, 1992; Fava &Velicer, 1996; Wood et al., 1996).

With these points in mind, it is very concerning that (1) All Rorschach raw count variables are reduced to a single dimension in R-PAS, which is an extreme form of reductionism and (2) that this decision is not supported by any statistical argument in R-PAS manual while several modern techniques are available to assess the proper number of dimensions to retain, for example: Minimum Average Partial, Parallel Analysis, Optimal Coordinates, Comparison Data (Buja & Eyuboglu, 1992; Horn, 1965; Raîche et al., 2013; Ruscio & Roche, 2012; Velicer, 1976). Given these two points, R-PAS Complexity model very likely represents an extreme form of underextraction, which is a severe problem, even if the tautological issue of Complexity was not addressed.

Toward a dimensional approach to the Rorschach:

R-PAS manual states that the Rorschach 1st factor "emerges consistently in factor analytic research" (Meyer et al., 2011, p.319). While this point is true, it is also an oversimplification of the literature on the dimensional approach to the Rorschach. Indeed, we identified six relatively consistent dimensions in the literature:

1. *Productivity*, a dimension essentially defined by the total number of responses and which explains most of the variance of Rorschach data, equivalent to Complexity (Meyer, 1992b; Murstein, 1960; Schori& Thomas, 1972; Wittenborn, 1950; Wood, Krishnamurthy, & Archer, 2003).
2. *Form Dominance*, a dimension composed of form dominant color and shading responses (Costello, 1998; Schori& Thomas, 1972; Shaffer et al., 1981; Zillmer&Vuz, 1995).
3. *Color Dominance* regroups color and some shading responses with vague or no form (Costello, 1998; Geertsma, 1962; Mason, Cohen & Exner, 1985; Shaffer, Duszynski, & Thomas, 1981; Wittenborn, 1950; Zillmer&Vuz, 1995).
4. *Perceptual Accuracy*, a bidirectional dimension with ordinary form qualities on the positive pole and poor form qualities on the negative one (Geertsma, 1962; Wood, Krishnamurthy, & Archer, 2003; Zillmer&Vuz, 1995).
5. *Kinesthesis*, a dimension composed of Human Movement and related variables (Geertsma, 1962; Schori& Thomas, 1972; Shaffer et al., 1981; Wittenborn, 1950).
6. *Synthesis*, a dimension mainly composed of whole responses (W), perceptually organized responses (Zf), and synthesis responses (DQ+) on the positive pole, and pure form responses (F, F% or Lambda) on the negative one (Anderson & Dixon, 1993; Geertsma, 1962; Mason et al., 1985; Schori & Thomas, 1972; Shaffer et al., 1981; Wood, Krishnamurthy, & Archer, 2003; Zillmer & Vuz, 1995).

A careful review of the literature on the factor or component analysis of the Rorschach raises four main problems:

a. how to address the problem of R,
b. choice of variables to include in the analysis (there are many redundancies and multicolinearity issues between Rorschach scores),
c. distribution issues and
d. dimensionality issues (how many dimensions to retain).

Published factor or component analyses of the Rorschach generally address some of these points but not the four of them in a systematic manner, and consequently these studies generally present divergent results (see Fontan, 2014, Fontan et al., 2016 for detailed reviews). In addition, focus on factor/component analyses of the Rorschach has decreased in recent years (Piotrowski, 2017).

To overcome the difficulties of the dimensional approach to the Rorschach test, we proposed to address these four issues together. Paying attention to the dimensionality issue, we developed a technique which combines resampling techniques and parallel analysis and found 12 dimensions to retain out of Rorschach count variables referred as the Rorschach Component Model (Fontan et al., 2016). While this work is still in progress, it sets the basis for an alternative and consistent dimensional approach to the Rorschach.

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Annex A

First unrotated component loadings of real and random Rorschach protocols

	Real Protocols	Random Protocols
Variable	Component 1	Component 1
Number of responses R	.95	.99
Whole responses W	.34	.83
Detail responses D	.72	.79
Uncommon detail responses Dd	.59	.50
Space responses S	.55	.46
Ordinary Developmental Quality DQo	.77	.92
Synthesis Developmental Quality DQ+	.61	.69
Vague Developmental Quality DQv	.30	.53
Human Movement responses M	.62	.69
Animal Movement responses FM	.38	.49
Inanimate objects Movements m	.31	.38
Achromatic color responses SumC'	.34	.24
Diffuse Shading responses SumY	.57	.43
Texture responses SumT	.26	.20
Vista responses SumV	.32	-.04
Reflection responses Fr+rF	.26	.30
Form-Color responses FC	.55	.52
Color-Form responses CF	.44	.29
Pure color responses C	.18	.42
Form Dimensional responses FD	.11	.33
Pure Form responses F	.52	.84
Ordinary Form Quality FQo	.69	.84
Unusual Form Quality FQu	.74	.77
Minus Form Quality FQ-	.61	.57
Pair	.73	.79
Human Contents (H, (H), (Hd), Hd)	.72	.72
Animal Contents (A, (A), (Ad), Ad)	.70	.79
Cultural Contents (Art, Ay)	.45	.51
Natural Contents (Na, Cl, Ls, Bt, Ge)	.44	.49
Anatomical Contents (An, Bl, Sx, Xy)	.53	.45
Burning Contents (Ex, Fi)	.30	.36
Material Contents (Sc, Hh, Cg)	.46	.67
Food contents Fd	.00	.27
Human Experience contents Hx	.30	.25
Idiographic contents Id	.40	.45
Popular P	.28	.72
Z score frequency Zf	.68	.84

Projective and Psychometric Indices of Suicide Ideation

Manju Rani and Umed Singh

Suicide ideation is an important precursor to later attempted and completed suicide (Brent, et al., 1993; Gili-Planas, et al., 2001; Lewinsohn, et.al, 1996; Reinherz, et. al, 1995). National surveys estimate that 11.4% of college students seriously considered attempting suicide in the past year, 7.9% made a suicide plan, and 1.7% attempted suicide (Barrios, et al., 2000). Suicide ideation has been associated with poor psychosocial functioning (Reinherz, et al, 2006), future depressive disorders (Fergusson, et al., 2005; Steinhausen & Metzke, 2004). The present study aimed at the relation between the Rorschach Comprehensive System's Suicide Constellation (S–CON; Exner, 1993; Exner & Wiley, 1977) and in a personality inventory (Personality Assessment Inventory: e.g., Suicidal ideation (SUI)and to cross-correlate these indices. The sample consisted of 350 young adult females matched by gender, age and educational level randomly drawn from Kurukshetra University. The age of participants ranged between 21-24 years with the mean age of 22 years. The obtained data were analyzed by Descriptive Statistics, spearman Correlations. Results indicate reliable convergence between the SUI (PAI) and Rorschach S-CON indices.

In recent years the discussion on the diverse methods of psychometric testing for clinical and forensic practice has greater than before (Gacono, et al., 2002). Many psychological tools have been proposed and used, with different theoretical and methodological bases: e.g., inventories, and structured 'projective' test. The criticism about the psychometric characteristics of reliability and validity of the latter category of instruments (e.g., Lilienfeld, et al., 2000; Wood, et al, 2003) makes them less suitable for use in forensic evaluations. Other Authors, based on the review of empirical studies, come to different conclusions (Meyer, 2004; Gacono& Evans, 2008; McGrath, 2008; Bornstein, 2012).

Suicide is accounted for as one of the most fundamental health problems throughout the world and approximately 900,000 individuals die of suicide worldwide (Patel et al., 2012). Suicide involves cognitive, emotional, and behavioural components with specific risk factors that may have different characteristics and influences according to developmental age and gender (Fan et al., 2012). Suicide worldwide is estimated to represent 1.8% of the total global burden of diseases in 1998 and 2.4% in countries with the market and former socialist economies in 2020(WHO 2011). In India, 113,914 people committed suicide in the year 2005 (National Crime Records Bureau 2008). It has been found that more than one lakh lives are lost every year due to suicide in India (Vijaykumar 2010). In India majority of suicides (37.8%) are by those below the age of 30 years and 71% of suicide in India is by people below the age of 44 years. It imposed a huge social, emotional and economic burden on society (NCRB, 2008). As compared to adult males, adolescent males' complete suicide at rates approximately five times higher than rates for adolescents' females (Kochanek, et al.,2004). The reason for the lower rates of death in females than in males is due to the less-lethal preferred method of attempt for suicide. The rate of suicide rose in the 1970s-1990s in youths between the ages ranges of 15 to 19 years. This increase is attributable to the rising rate of depression, the increased availability of firearms and other means among adolescents (Commission on Adolescent Suicide Prevention, 2005).

There is abundant literature concerning Rorschach data on suicidal subjects (Goldfried, et al., 1971). Although Rorschach is the most widely used method for assessing suicide risk in clinical settings (Bongar, 1991), research has yielded equivocal results. One reason for its limited efficacy is the fact that most studies focused primarily on single signs such as the colour-shading blend (Applebaum & Colson, 1968; Applebaum & Holtzman, 1962), symbolic content (Sapolsky, 1963), or a combination of the two (Fleisher, 1957; Hertz, 1948; Piotrowski, 1950; Sakheim, 1955).

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Keywords: Rorschach test, Personality Assessment Inventory, suicide constellation, Suicidal ideation.

Exner and Wiley (1977) rectified several methodological problems when they applied more rigorous standards in the development of the S–CON. This statistically generated constellation yielded a single score from a composite of 11 variables and ratios. In the original study of 59 completed adult suicides, the authors found a total S–CON score of 8 positive indexes correctly identified 75% of the patients who died as a result of the suicide attempt. In a follow-up study, Exner (1993) added a 12th variable, finding a cutoff score of 8 positive indexes correctly identified 74% of those who completed suicide. To date, four studies (Affra, 1982; Exner, 1993; Exner & Wiley, 1977; Silberg& Armstrong, 1992) assessed the prediction of suicide using variables from S–CON.

Despite demonstrable results in predicting completed suicides, the utility of the Rorschach as a predictive tool in suicide assessment continues to be criticized (Frank, 1994). The most recent criticism (Wood, et al., 1996) cited psychometric and methodological problems associated with the comprehensive system, including a pointed criticism of the S–CON. This study was designed to accurately assess the predictive validity of the S–CON by capitalizing on methodological recommendations made by Farberow 1950; Exner& Wiley1977; and Wood, et al. (1996). To assess the predictive validity of the S–CON it was necessary to (a) compute inter-rater reliability of the Rorschach variables comprising the S–CON under the conditions outlined by Weiner (1991); (b) explore the capacity of the S–CON to discriminate among psychiatric inpatients who engage in near-lethal suicide attempts versus those that engage in "Parasuicidal" or no suicidal activity; (c) assess the clinical efficacy of the S–CON incorrectly predicting, in advance, which individuals will later engage in near-lethal suicidal behaviour when compared with other clinical and non-patient groups; and (d) explore the relations between total S–CON scores and discrete behaviours such as drug overdoses, self-inflicted lacerations, and emergency medical transfers due to suicide attempts

Despite the theoretical and practical importance of this subgroup of patients, relatively limited attention has been paid to this issue in the development of assessment and screening instruments over the years. Recently, Sinclair et al. (2016) developed a new index from the Personality Assessment Inventory (PAI; Morey, 2007) designed specifically to identify individuals with multiple past suicide attempts. The Chronic Suicide Risk Index (S_Chron) is a composite measure incorporating scores from 6 PAI scales or subscales: Borderline Features-Self Harm, Borderline Features-Negative Relationships, Negative Impression, Stress, Antisocial Features-Antisocial Behavior, and Mania-Grandiosity (reverse-scored). This index was developed and cross-validated on two relatively large samples of civil psychiatric patients (both with sample sizes approaching 400 participants) who previously had been administered the PAI, primarily by using step-wise multiple regression procedures to identify scales and subscales that uniquely contributed to the prediction of past suicide attempts.

Based on the review it has been observed that comprehensive exploration of suicide risk factor both projective and self-report measures needed to be used. So, the present study is an empirical attempt to explore both the projective and psychometric personality indicants of suicide ideation.

Method:

Sample:

The sample consisted of 350 postgraduate female students related to various P.G departments of Kurukshetra University, Kurukshetra (Haryana). Only female students who volunteered to participate were included in the sample, after the introduction of the research plan. Gender was controlled in new of earlier findings which reported the impact of gender of the administrator of test on Rorschach protocols and investigator being female. The age of participants ranged between 21-24 years with the mean age of 22 years.

Measures: following test/ measures were used to collect the data.

Rorschach inkblot test: all the ten plates of RIT were administered and scored according to the procedure prescribed by Exner (1996) his Rorschach comprehensive system obtained protocols were scored for Suicidal -Constellation

Personality assessment inventory: Morey, (1993). Developed PAI to get information relevant to clinical diagnosis, treatment planning and screening of psychopathology. Its full scale consists of 344 items and each item is rated on 4- point scale. It consists of 22 non-overlapping scales. It consists of 22 non-overlapping scales including 4 validity scales, 11 validity scales, and 2 interpersonal scales. The score on suicide ideation scale was used in the analysis for the present study.

Procedure:

After established of appropriate rapport both the test was administered individually in separate sessions. Study By following the procedure prescribed by the authors. Obtained protocols were scored for relevant variables according to the prescribed scoring procedure. Obtained data were analyzed by applying, descriptive statistics and Spearman rank differences method of correlation.

Result and Discussion:

The scores obtained were processed by calculating their respective percentage Statistics of S-CON, (RCS) & SUI suicidal ideation (PAI):

Table1: S-Constellation (Suicide Potential) RCS SUI suicidal ideation (PAI)

Scon		Female Students (N=350)
Scon_ 1 FV+VF+V+FD>2	Absent	237 (67.71%)
	Present	113 (32.29%)
Scon _2 Col-Shd Blends >0	Absent	226 (64.57%)
	Present	124 (35.43%)
Scon _3 3r+ (2)/R<.31 OR > .44	Absent	117 (33.43%)
	Present	233(66.57%)
Scon _4 MOR >3	Absent	334 (95.43%)
	Present	16(4.57%)
Scon_ 5 Zd>+3.5 or Zd<-3.5	Absent	263 (75.14%)
	Present	87(24.86%)
Scon _6 es> EA	Absent	227(64.86%)
	Present	123(35.14%)
Scon _7 CF+C>FC	Absent	194 (55.43%)
	Present	156(44.57%)
Scon _8 X+% <.70	Absent	219(62.57%)
	Present	131(37.43%)
Scon _9	Absent	317(90.57%)

S>3	Present	33(9.43%)
Scon _10 P<3 OR P>8	Absent	290(82.86%)
	Present	60(17.14%)
Scon _11 Pure H <2	Absent	350(100%)
	Present	0(0%)
Scon _12 R<12	Absent	349 (99.71%)
	Present	1(0.29%)

.

Personality assessment scales (suicide ideation)	present (N-350	absent N-350
	120 (34%)	230 (66%)

Colour - shading blends:

It depicts that the two-colour-shading blend (combining colour with C', T, T, FV). It indicates the presence of certainty, understanding, or even decisiveness about feelings. They are uncertain at times about their feelings. It should be postulated that the subjects are often enlightened by emotion or emotional situations. People such as this usually experience feelings more intensely than others and sometimes have more simplicity in bringing closure to emotional situations. Implies concern with joyful, comforting, comprehensible emotional experiences, and it is associated with the protocols of depressives. Colour-Shading Blends of this type indicate the probability of a pre-existing understanding or determined, about feelings and the possibility of situational understanding about feelings.

EI – Egocentricity Index:

Egocentricity Index is in the high range; it suggests that subjects are self-involved than most others. Subjects have an inflated sense of self-worth, which reflects underlying satisfaction. This may be expressed impart of the external world. Such individuals regard themselves as favorably when compared to others. It is likely to be favorable as it probably indicates the process of social maturation is ongoing. It is a less positive finding for an adult because challenges to the exaggerated sense of personal worth usually provoke an increase in the use of defences that have been reinforcing in the past. This is usually not associated with suicide risk.

MOR:

It depicts the self-image of the person includes impressions of positive features. Logical fallacy &decision-making capacity is higher in them. They are capable of reasoning clearly and consistently some result from a general accumulation of adversities or setback while others may stem more directly from specific succeeds concerning educational, occupational, emotional, or social experiences, some of which could be recent. Most of the data regarding the relationship between morbid content responses and thinking is derived from research concerning depression, and the reports of therapists working with depressed patients. The Special Score MOR evolved from efforts to study depression in children. Some previous efforts to use morbid content as a suicide indicator had been noted to achieve some modest success (White & Schreiber, 1952; Sakheim, 1955; Fleischer, 1957; Thomas, et al., 1973).

Zd:

It depicts that Zd value falls in the average range; it can be assumed that the scanning efficiency is like that of most people. Following the discovery that a Zd score may contribute useful information about processing behaviour, several studies concerning this issue were completed.

es: normal es indicates that greater controls are developed to contend with the forces that act on the individual, either neutralizing them to a reasonable extent or reorganizing them in such a manner that they act for the individual. Suggests average frustration tolerance, easy to be persistent, even in meaningful tasks, organized, attentive, and substantiality.

EA:

It depicts that the more EA subjects have in their record, the more adaptive capacity they have at their disposal and the more competence they are likely to display in pursuing their aims and objectives. It probably reflects a reliable and valid index of capacity for control and stress tolerance. Abraham, et al., (1994) reviewed data for 50 adolescents who had not improved in outpatient treatment and were placed in residential treatment. In the baseline test, 48 (96%) of the 50 had EA values of less than 7.0. The mean EA for that group was 3.19. Two years later, the proportion continuing to have EA values less than 7.0 had decreased to 38 (76%), but the mean EA for those subjects had increased to 5.38. EA retest correlations for no patient children, although ranging from .80 upward when retested after brief intervals, are very modest and often out significant when the retest is administered after nine months or longer, ranging from .19 to .45 (Exner& Weiner, 1982; Exner, et al., 1985).

CF+C> FC:

it depicts that the stability of the directionality shown in the CF+C: FC ratio is quite remarkable for adults in the degree of control a person has over his or her impulses. When CF and C are absent, there may be over control of emotions. A ratio greater than 3:1 indicates that the subject exerts considerably more effort at modulating affective discharge than is typical. Low colour may suggest depression. NO COLOR: Rigid, cold, internalizes affect, vegetative depression, weak interpersonal relationships, avoids making "waves." Sum C: If the total Sum C is only one FC (or total lack of colour), this suggests a weakness in object relations. A Sum C between 0 and .5 is often seen independents or individuals prone to suicidal behaviour.

Color Projection:

This is rare and is associated with denial as a defence. Chromatic colour responses appear to vary considerably in terms of how much or how little cognitive effort and complexity is involved. Schachtel (1943) was among the first to suggest this and argued that the perception of colour involves minimal activity and defined colour responses as reflecting a passive process. Rickers-Ovsiankina (1943) reviewed a significant number of research works concerning perception and concluded that colour perception is a more immediate process than form perception, requiring less cognitive activity in the mediation of the stimulus input.

X+%:

It depicts that The X + % is essentially an indicator of the degree to which a person perceives things in a conventional, realistic manner. Subjects have a substantial proclivity to formulate behaviours that are in accord with social demands or expectations.

S:

It depicts healthy self-assertion; represent Positivism, Least partial support for these various positions. Counts &Mensh (1950) used a retest model and found a significant increase in S after hypnotically inducing conflict. Fonda (1951) and Bandura (1954) both found a significant positive relation between S and oppositional tendencies. Rapport et al. (1946) reported that the highest incidence of S is found among paranoid schizophrenics, and Molish (1955) has posited that when S appears in schizophrenic records, it represents a process through which a passive resistance to the environment is maintained.

Popular:

It depicts that The number of popular responses reflects the subjects' degree of similarity to most people, the extent to which they conform to social standards, and the relative ease with which they can be influenced in interpersonal relationships. Baughman (1954) found P to be one of the most stable features in the test, and least subject to undue sets created by examiners. His findings are supported in a variety of retest studies (Exner, et.al, 1978; Exner & Weiner, 1982). Short-term reliabilities range from .84 to .88, and over longer intervals from .79 to .86.

H:

Pure human, it depicts the ability to envision people incomplete, intact, multifaceted, and integrated ways. On average, introversive give between two and three more human contents per record than either ambient or extensive and most of those are Pure H responses. Interestingly, a person with an avoidant style (high Lambda) tends to give slightly more human contents than ambitions. In the Weiner and Exner (1991) study of Rorschach changes after short- or long-term outpatient treatment, 147 of the 176 participants averaged about five human contents in their pretreatment records, of which most (3.5) was not Pure H. In a retest taken 27 to 31 months after treatment began, and at which time all patients in the short-term group had terminated, all participants averaged slightly more than six human contents, and only 24 continued to have fewer Pure H answers than the combination of (H)+Hd+(Hd).

R:

It depicts that suggests introversive character, average intelligence with the relatively high level of academic achievement, and a high degree of creativity. It is also suggesting good ego functioning, including the ability to plan, adequate impulse control and the ability to tolerate stress.

Constellation (Suicide Potential) RCS:

On SCON variables it was found that none of the normal subjects scored above the cutoff (more than 8). Although it was found that in current study, around 32% on criteria 1, 35% on criteria 2, 66% on criteria 3, 24 % on criteria 5, 35% on criteria 6, and 44% students qualify on criteria 7. these findings indicates that these 7 criteria is reliable indicators of suicidal ideation. Criteria 1 (FV+VF+V+FD>2), 2 (Col-Shd Blends >0) and 3(3r+ (2)/R<.31 OR > .44) related variable are known as top three important variables for suicidal constellation. Although majority of the subjects appear capable of thinking in a flexible manner that facilitates their being able to contemplate alternative perspectives on their experience, to consider changing their point of view, and to keep their mind open to new information and previously unfamiliar ideas. No matter how long or firmly they have held their present opinions and beliefs. Such flexibility is a personality asset that promotes good adjustment and contributes to progress in psychotherapy; it ensures that a person will always think logically and coherently. Subjects are a cognitively well-functioning person. They organize information efficiently (Zd = -0.97), looks at the world about the way most people do, and perceives events realistically and conventionally, P = 6). They appear to be capable of thinking logically, coherently and have adequate frustration tolerance, adaptive capacity for self-control and relative freedom from subjectively felt distressed.

Suicide ideation (PAI):

An average score on SUI or below reflect a few thoughts about death and suicide. There is some evidence to suggest that the PAI Suicidal Ideation (SUI) scale may provide valuable information about the patients' potential for serious suicidal gestures. In current study 120 students (34%) got the higher mean on suicide ideation scales , indicate that these students are on higher risk or prone for suicide Ideation. Rogers et al. (1998) found moderate correlations between the SUI scale and Suicide Potential Index (SPI). Wang et al. (1997) used the PAI with male inmates in a correctional setting and found that the SUI was the most highly correlated with suicide risk, followed by Borderline Features, Depression, Paranoia, Anxiety, and Warmth. The most notable subscale and index correlations included: Depression-Cognitive, Borderline-Self-Harm, Borderline-Affective Instability, SPI, Depression-Affective, and Schizophrenia-Social Detachment.

Conclusion:

Our respondent around 34% found to be prone or susceptible for suicide ideation indicated by S-CON and SUI (PAI), so it is evident that both the test are sensitive to predict suicidal ideation among normal health control. Although majority of respondent Have Self-Awareness, they don't have suicidal ideation. They are psychologically competent. Subjects demonstrate adequate abilities to identify comfortably with real people in their lives and appear to have opportunities to form such identifications. Subjects appear to have enough psychological resources to cope adequately with the demands being imposed on them by internal and external events in their life. Therefore, they can ordinarily manage the stresses in their life without becoming unduly upset by them and are likely to be relatively free from overt anxiety, tension, nervousness, and irritability. Such people tend to be stable. Individuals, who possess at least an average capacity to tolerate frustration, persevere in the face of obstacles and exert adaptive control over their behaviour. They are appearing capable of approaching others in a spirit of cooperation, the respondent shows about as much interest in other people as most adults do. This apparent interest in being around other people and paying attention to what they say and do are a personality asset that ordinarily contributes to good social adjustment.

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Personality Psychology Research: A Bibliometric Analysis of Investigatory Domain

Chris Piotrowski

The subfield Personality Psychology has been a major component of the core structure and knowledge base of the discipline of psychology (Yang & Chiu, 2009). Yet there is a dearth of bibliometric studies regarding the scope of investigatory emphasis reflected in extant research in this field, based on 'topical' analysis of subject areas or domains across a pool of published literature. The current study addresses this gap by conducting a content analysis of research studies (i.e., articles) published in 2 prominent journals (i.e., Journal of Personality and Journal of Research in Personality) over the past 10 years. The major aim was to determine the scope and breadth of investigatory topical areas that are the major focus of study by researchers. Over this time frame (2010-2019), a total of 1367 articles from both these journals were published; of these, 1340 references were determined to be primary articles (27 comments, replies, erratum, editorials were excluded); thus, these 1340 articles served as the dataset for the current analysis. The author coded each article with a topical descriptor and maintained a scoring template based on frequency counts across subject categories. This analysis identified 45 topical categories which represented at least 1% of the total distribution. The top researched topics were: models/theory, interpersonal relationships, Big 5/Five Factor, statistical approaches/methods analysis, personality traits, well-being, narcissism, motivation, emotion, person perception, morals/values, and stability of personality. Moreover, a myriad of subject areas received limited investigatory attention in Personality Psychology, most noteworthy: unconscious processes, defense mechanisms, social desirability, race/ethnicity, somatization, cognitive (IQ) factors, coping mechanisms, creativity, leisure, and meaning of life. Overall, this descriptive analysis confirms that the field of Personality Psychology is robust in scope and reflects varied research interests, yet the breadth of investigatory and/or perhaps editorial topical coverage could be expanded to reflect salient, highly-researched areas noted in the general clinical literature. Several differences in research emphasis between these prominent personality journals were noted.

The study of personality has a long-standing historical foundation as a core area of scholarship within both social and clinical psychology (Allik, 2013; Roivainen, 2016; Yang & Chiu, 2009). Indeed, coursework on the myriad of aspects of personality form a cornerstone of the general psychology curriculum at the undergraduate level (e.g., McCrae, 2011), as well as a key clinical component of graduate study in professional psychology (Piotrowski, 2015; Piotrowski& Belter, 1999). Despite the fact that comprehensive textbooks on the topic of 'Personality' have harbored much academic and clinical attention over the years (John et al., 2010; Hogan et al., 1997; Pervin, 1990; Weiner & Greene, 2008), few studies have examined the breadth and scope of research attention in this specific area of study. Thus, the current study aims to provide an exploratory, contemporary perspective on the structure of scholarship evident in published research across the specialty area of personality psychology over the past decade.

Rationale for Study:

Bibliometric Studies in the Field of Personality Psychology:

Bibliometric analysis is a recognized and valid means of gaining an objective perspective on research trends of the extant literature (De Bellis, 2009), including bibliometric study on a myriad of psychological topics in the mental health field (e.g., Piotrowski, 2012; Rusk & Waters, 2013). Moreover, several reports have examined the journal contents (i.e., contents analysis) of specific scholarly periodicals in the discipline of psychology (e.g., Gonzalez-Alvarez & Palomar-Garcia, 2014; Piotrowski, 2012, 2016). Yet few bibliometric-type studies with a focus on the area of personality psychology have been published.

Johnson et al. (1980), in a study of articles from the Journal of Personality (1973-1976), concluded that the investigatory focus was on 'micro-theories' exploring specific variable-behavior relationships as opposed

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to applications of traditional theories of personality. Ehrenreich (1997), in a content analysis of personality textbooks and journal articles in 2 'personality' journals, found that many salient topical domains were rather neglected (i.e., racial identity, cross-cultural factors). In a content analysis of the Journal of Personality (1970-1995), Mallon et al. (1998) reported on methodological issues (e.g., sampling, research design, main variables under study). Allik (2013), in an analysis on patterns of cited references across 9 personality psychology journals, found that American personality psychologists predominantly ignored relevant research from foreign countries. Recently, Piotrowski (2019) conducted a topical content investigation on the specific clinical area of personality assessment, in a bibliometric analysis of the Journal of Personality Assessment.

Investigatory Approach:

In order to obtain a valid portrait of the scope of recent literature in the subject area of Personality Psychology, it was decided to target the review to primary articles published in the Journal of Personality (hereon, JoP) and Journal of Research in Personality (hereon, JoRP) over the past decade. Both journals are considered top-tier scholarly publication outlets for research dealing with the study of personality (see Allik, 2013; Hooper et al., 2017).

An online search in PsycINFO, for this time span (i.e., 2010-2019), produced 613 peer-reviewed article references for the Journal of Personality and 754 articles for the Journal for Research on Personality. Of these, 27 references were omitted from the analysis as these are not considered 'primary' research studies (editorials, comments/rebuttals, corrections/erratum, book reviews). Thus, the final dataset, combined, comprised a total of 1340 peer-reviewed articles.

Based on extensive experience conducting bibliometric analyses on various research topics and individual journals, the author reviewed each study and determined the topical focus of the article. The specific aim was to determine the main topic/issue under study, not specific measures or tests in the investigation. Each article was coded with only 1 topical designation. A running-tab was maintained until all 1340 articles were categorized which culminated in a rank-ordering of the most frequently researched topics. Thereby, this procedure produced a descriptive 'snapshot' of the major topical areas that represented the scope and breadth of investigatory domains that are the focus of study by personality psychology researchers in recent years.

Findings and Discussion:

Table 1 displays, in rank order, the most emphasized topical areas (n=45) that represented at least 1% of the total dataset in the analysis. There appears to be prominent levels of investigatory emphasis and continuing research devotion to the study and application of psychological theory and a myriad of models across subject areas in personality psychology (Boyle et al., 2012; John et al., 2010, pp. 29-262; Mason et al., 2019). Interestingly, social and intimate relationships, particularly their functionality and impact on the individual are major investigatory domains which attract extensive research interests (see Caprara & Cervone, 2000, pp. 187-207; Cooper, 2002). Corroborating recent reviews of the psychological assessment literature (see Piotrowski, 2019), the current analysis shows that the Big Five/5-Factor theoretical and conceptual framework (Baranczuk, 2019; Costa & McCrae, 2009) seems rather dominant in the personality psychology field over the past decade. In addition, there appears to be extensive research interest on novel and improved methods and approaches to statistical analyses of research data, as well as variations in methodological approaches in the analysis of data (Coulacoglou & Saklofske, 2017; West et al., 2011). Not surprisingly, research on personality 'traits' continue to be a traditional focus of scholarly investigation in the field (Bleidorn et al., 2019; Harkness, 2009).

Perhaps a reflection of the positive psychology movement, the subject area of well-being is a predominant area of investigatory research. In this regard, the role of emotions and motivation continue to be predominant investigatory domains in recent years, particularly in the study of the maintenance of well-being and overall mental health (John et al., 2010, pp. 701-814; Lennard et al., 2019; Mohiyeddini et al.,

2013). Not surprisingly, the central role of the social milieu in the formation of personality was quite evident in the current analysis, evidenced by the extensive research focus on the subject matter of person perception (see Table 1). From a research methods perspective, investigators in personality psychology have an avid interest in findings based on both longitudinal and cross-national research designs. Indeed, issues like personality or trait development across the lifespan continue to attract scholarly attention (Schwaba & Bleidorn, 2019; Wagner et al., 2019). Finally, readers are directed to Table 1 for a listing of the top 45 topical areas of investigatory emphasis in personality psychology research over the past decade.

Table 1. Topical Areas of Emphasis in Research Studies in Personality Psychology (2010-2019)

Major Topical area of study	**Journal of Personality (dataset; n=604)**	**Journal of Research in Personality (dataset; =736)**	**Total Dataset (n=1340)**	
	n of articles	**n of articles**	**Combined**	
			Total	**(%)**
Models/Theoretical applications	52	48	100	(7.5)
Relationships/Social interaction	51	44	95	(7)
Five factor/Big 5	30	40	70	(5)
Statistical analysis/Applied methodology or procedure	15	47	62	(4.5)
Personality traits	23	34	57	(4)
Well-being	25	26	51	(4)
Narcissism	19	27	46	(3.5)
Motivation	15	24	39	(3)
Emotions	14	22	36	(2.5)
Person Perception	10	24	34	(2.5)
Morals/Values	16	18	34	(2.5)
Self-Esteem	12	21	33	(2.5)
Stability-personality	16	16	32	(2.5)
Health/medical factors	18	14	32	(2.5)
Longitudinal studies	17	11	28	(2)
Neuro-biological/hormonal	12	16	28	(2)
Attachment	11	16	27	(2)
Cross-national/ Cross-cultural	10	16	26	(2)
Psychopathy	14	11	25	(2)
Stress states/PTSD	10	15	25	(2)
Self-control	12	13	25	(2)
Academic Achievement	10	14	24	(2)
Identity/ Self-Concept	11	12	3	(1.5)
Emotion regulation	10	13	23	(1.5)
Neuroticism	17	5	22	(1.5)
Goals/Aspirations	7	15	22	1.5)
Politics/Social movements	11	10	21	(1.5)
Behavioral genetics	10	10	20	(1.5)
Gender differences	3	15	18	(1.5)
HEXACO	3	15	18	(1.5)
Perfectionism	5	12	17	(1.5)
Anxiety/Phobias	10	6	16	(1)
Self-regulation	10	5	15	(1)

Dark Triad	5	10	15	(1)
Aggression	5	10	5	(1)
Employment/career	6	9	15	(1)
Impulsivity	3	10	13	(1)
Response style/process	2	10	12	(1)
Optimism	7	4	11	(1)
Depression	5	6	11	(1)
Social Media/SNS	1	10	11	(1)
General Personality Factor	1	10	11	(1)
Pro-social issues	7	3	10	(1)
Parenting	6	4	10	(1)
Religion/spirituality	6	4	10	(1)

Areas of Limited Research Emphasis:

Topical analysis frequently provides evidence on areas of sparse research interest. Table 2 presents a myriad of topical subject areas that garnered minimal levels of visibility (<1%) in the current analysis. This limited attention is a bit surprising, given that several of these topical domains attract robust scholarly attention in the contemporary psychological literature.

Table 2. Areas with Limited Research Attention in the Study of Personality

Defense mechanisms	Social desirability	Unconscious processes
Personality disorders	Grit/Resilience	Suicide
Race/Ethnicity factors	Executive functions	IQ
SES	Meaning of life	Empathy
ADHD in children or adults	Sexual abuse/Assault	Chronic pain
Somatization	Loneliness	Self-Efficacy
Cognitive factors	Intolerance/Inflexibility	Curiosity
Substance abuse	Creativity	Grief/views on death
Mood states (anger, grief, guilt)	Elderly samples	DSM
Psychotic states	Gender identity	Sexual orientation
Body image/appearance	Decision-making/Metacognition	Coping/Quality-of-life
Therapy/intervention	Generativity	Eating disorders
Leisure	Influence of color	Positive personality factors

While gender has been, historically, a perennial methodological (i.e., sample selection) concern, most researchers do not focus exclusively on the impact of sex differences on study results (see Hartung & Lefler, 2019 for a discussion). Moreover, in recent years, gender identity and sexual orientation have captured extensive interest in the social sciences and popular media, yet it appears that these factors have not gained parallel attention in the study of personality.

Comparison of JoP vs. JRiP:

This analysis indicated several topical areas that were more emphasized in one journal more than the other. Based on data presented in Table 1, JoP had more articles on neuroticism and self-regulation, and published more longitudinal studies than did JRoP. Conversely, JRoP had more emphasis across a myriad of topical areas, i.e., methods/statistical issues or alternatives, response style/format, person perception, 'General' personality factor, social media/online applications, HEXACO, sex differences, emotions, and self-esteem.

In addition, JoP had 7 articles each on the topics of affiliation and obsession/passion, whereas JRiP had none. JoP had several on empathy (5) and burnout (3), but JRiP only had one. Conversely, JRiP had several articles across a myriad of topics, i.e., sensation-seeking (6), happiness (5), emotional IQ (5), stereotypes (4), Birth order (3), whereas JoP had none with a major focus on these topics. Interestingly, JRiP published 7 articles on both 'Lexicon' factors and forgiveness; JoP had none in these subject areas.

Conclusion:

The current bibliometric analysis, which provides a canvas of the literature, indicated that although the field of "personality psychology" publishes primary research reports across a broad-band scope of investigatory domains and subject areas, a myriad of salient research topics and mental health factors are under-represented by researchers in this area of study. Interestingly, this analysis showed that in the field of personality psychology there is more prominent investigatory emphasis on personality traits and stability than on the domain of personality disorders (Cierpialkowska, 2013; Widiger, 2012). Also, the JoRP has significantly more coverage of the 'General' personality factor than does JoP (Schermer et al., 2019). Whether this finding is a function of journal policies or research interest remains an open question. Thereby, the current findings support the view that contemporary scholarship in Personality Psychology has a comprehensive scope, yet at the same time tends to focus on some select topics more than others. Perhaps, such a state-of-affairs confirms a healthy, but challenging, state of affairs regarding research attention in this study area.

Noteworthy, there are several research streams that have attracted significant attention among personality scholars in the emerging literature, i.e., the role of emotions (Davis & Panksepp, 2018; Frankenhuis, 2019), the influence of well-being (Anglim et al., 2020), the intersection of personality and psychopathology (Krueger et al., 2019), and stability of personality over the lifespan (Damian et al., 2019; Rupprecht et al., 2019). Finally, these findings await further corroboration based on personality research indexed in auxiliary scholarly databases in both the social and health sciences (e.g., MEDLINE).

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Somatic Imagery Test as a tool for Assessment of Hostility and Aggression: Case Analyses

Shubhika Singh and Anand Dubey

Somatic Imagery Test (SIT- online version) was administered on two separate clients who had come for therapeutic intervention. The test was done to assess their personality and unique experiences in life. The test also aided the process of rapport formation and helped build a good therapeutic alliance. The inkblot images were helpful in bringing out flared up aggression, relational conflicts and their individual forms of coping (one through spirituality and other through defenses). The responses were analyzed using content analysis and psychoanalytical interpretation.

Personality assessments have always been of prime interest to psychologists and psychotherapists. Projective tools such as the Rorschach Inkblot Test, Holtzman Inkblot Test, Somatic Inkblot Series (SIS), Thematic Apperception Test and Word Association Test are some of the commonly preferred tools for tapping the unconscious material which is often not known to clients. Such repressed or suppressed material becomes the source of undesirable behavior.

The Somatic Inkblot Series (SIS) is a semi-structured, projective, diagnostic procedure and is an adjunct to psychotherapy. (Cassell and Dubey, 2003). The Somatic Imagery test (SIT) is an online short version of 30 somatic images for quick assessment. It is designed for self-administration after supervised instruction. The subject visited https://dubeyhealingcenter.com with the following instructions, "Most people find this test fun and interesting. First, please relax, and prepare to enjoy it. Please write each in terms of what they resemble or look like to you. Different people see different things in the inkblots. It is important to write whatever the inkblot looks like to you. Please include everything you see even if it reminds you of something remote, vague, highly personal or even potentially embarrassing. Please include everything you see with as much detail as possible. Also include any outstanding emotional reaction that you might feel in responding to these images. The test may take about 20 minutes to complete. Please be assured that there are no right or wrong answers."

The present case studies analyze the responses of two separate individual male clients who approached one of the authors (SS) for assessment and psychotherapy. They were assessed on the Somatic Imagery Test (SIT) - the online version (www.Dubayhealingcenter.com), to find out the unprocessed/unresolved unconscious material leading to undesirable aggressive behavior. When such unconscious material is addressed, the client feels relieved and improvement starts. The SIT has been used in several cases with positive results (Dubey, Banerjee & Dubey, 2019, Campagnoni & Dubey, 2020, Singh & Dubey, 2020).

Case A:

Mr. A is a 38 years old, married male with one daughter. He speaks Hindi and English. He holds a bachelor's degree and is working for the central government of India. The client is the oldest amongst three sons. Mr. A has had an arranged marriage followed by marital discord since the beginning of the relationship. He is close to his mother and has a strained relationship with his father. Mr. A is a habitual smoker and reports having anxiety and excessive worry about the future. The SIT was administered to him following the standard procedure (Dubey et al, 2018, Dubey et al, 2019) for understanding his overall personality and unprocessed unconscious

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materials that needed to be addressed during psychotherapy. He was motivated and cooperative during testing. Normal response to images has not been mentioned below.No images were rejected by the client. The clinically significant responses (given below) were interpreted using content analysis and psychoanalytic interpretation.

Image 6: The client perceived “Two black ants and it could also be a caricature of God.” The client’s inability to see two persons is indicative of poor interpersonal relationship with the opposite sex. Perception of God – a spiritual symbol in this image and in the previous two images (1 and 2) may indicate his desire to surrender before God to get spiritual strength and solution to his problems.

Image 8: On this image, the client reported seeing “Hand coming out of a Fire and a wall is also visible. There are also human beings”. Perceiving of a hand coming out of fire may indicate a severe adverse situation and a feeling of helplessness. The Wall symbolizes hurdles which he must cross and the “other human beings” might be the people who have created problems in his life. During therapy sessions he expressed undesirable behavior of his father and his wife.

Image 9: The client projected “2 sparrows (mother sparrow feeding the baby sparrow) and heart in the middle with the biggest vein”. The client’s avoidance to see two birds making love or kissing is indicative of interpersonal/ couple conflict. However, seeing a mother and child sparrow is a positive response which symbolizes a good relationship with his mother. It also indicates his attachment/affection towards his daughter.

Image 10: The client viewed “Two horses from the side view. And, from front it looks like an Egyptian mummy”. In this response, perceiving 'Horse' may indicate ambivalence towards domination over the partner. The response "Egyptian Mummy" and denial of heart is indicative of aggressive tendencies towards his partner with masked wishful desire to see his partner dead.

Image 13: He perceived on this image “Eagle or bat” and avoided perceiving two children/babies which is a strong indication of a dominant father figure in his life. It also indicates his conflict with father and the wish to get separated from him. It may also indicate deprivation of love and affection from his father during childhood, which was confirmed during therapy sessions.

Image 14: The client saw “From far it looks like a wine-opener kind of screw. But, from near it looks like a stack of human/cat faced caricature.” The perception of “a stack of human/cat faced caricature" is again indicative of aggression towards some female figure in the client's life and negative attitude. The wine-opener is a symbolic representation of male organ and sexual conflict.

Image 15: Instead of female genitalia he perceived “Sikhism Symbol”,on this image, which may indicate conflict with a female. However, perceiving a spiritual/religious symbol is a positive sign of spiritual attitude which is helping in resolving his problems.

Image 16: The client saw this image as “Hanuman ji (Monkey God) with one eye open and one closed.” One eye open indicates lack of trust or suspicious attitude. This may also indicate his suspicious attitude towards his wife. His perception of Monkey God – a God of power may indicate seeking divine intervention / spiritual power to resolve his family issues. Normally, people perceive ‘Fetus’ in this image and rejection of common response may indicate guilt feeling associated with the termination of pregnancy of his wife a few years back.

Image 19: The client perceived “Stone statues - One on the left is of a young guy and on the right is of an old man but initially it looked like a child.” The use of the word "stone" indicates a poor and difficult relationship with his father which he shared during therapy. As he narrated his father was a cruel and hard person and he had experienced constant physical and emotional abuse during childhood and adolescence.

Image 20: "Dialogue going on / exchange of ideas between an elderly couple." Even though this is a normal response, seeing an "elderly couple in exchange of ideas" may symbolize his parents having an unpleasant conversation.

Image 21: The client projected "Sharp paper or metal weapons aimed at a lady (in pink)." The response on this image indicates uncontrolled aggression/hostility towards some female in the client's life. The client shared about his poor relational dynamics with his wife and the anger he feels regarding the same.The projected response is alarming, and the client must be treated with pharmacological intervention and psychotherapy to control his aggression.

Image 23: The client said, "I am in a cave, and there are rocks on the side and in the middle but can see the passage due to light coming in between". Male sex organ is the common response on this image which he avoided. However, perception of "being in a cave and there are rocks on side" may indicate severe sexual conflict. Perception of "rocks around him" is a painful situation along with constant pressure, which he shared during therapy sessions. "Seeing the passage due to light coming in between" is a good sign of prognosis and the hope of managing his situation.

Image 25: The client perceived "Pistol after shooting a bullet or a medical instrument/tool used for suction." Again, a fired pistol is a highly aggressive response. It should be noted that the client must be given pharmacological aid and psychotherapy to control his aggression, otherwise, it might lead to unavoidable/ unlawful activities.

It can be concluded that the SIT images projected smooth relationship of the client with his mother, affection and care of his daughter, disturbed relationship with his father and wife, sexual conflict and severe aggression towards his wife. Pharmacological aid and psychotherapy will help in the management of aggression and unresolved conflicts.

Case B:

Mr. B is a 28 years old, unmarried male. He is an engineer by profession. The client has a very troubled relationship with his mother and has been in therapy with another therapist for the past six months. The Somatic Imagery Test (SIT) online version was administered following the standard procedure (Dubey & Dubey, 2018, Dubey et al, 2019) for understanding his overall personality and unprocessed unconscious material that needed to be addressed during psychotherapy. The clinically significant responses were interpreted using content analysis and psychoanalytic interpretation and are given below. The responses on remaining images that aren't mentioned below were all normal.

Image 3: The client perceived this image as "Looks like a face, heart shaped lips which talks sweet but inside it is just black and blank. Putting a show. Also, the pink reminds of strawberry cream biscuit?" The client's projection of the heart shaped lips which talk sweetly but inside it is just black and blank is indicative of lack of affection and poor interpersonal relationships. The client is projecting a lot of suffering or agony in personal life that he hasn't shared with anyone. The use of the word "black" is indicative of sadness or depressive features. This should be explored during therapy sessions.

Image 4: The client viewed "A kid kicking a ball. First view on the right was a mushroom cloud from an atom bomb detonation, now it looks like a stuffed teddy bear toy sitting on the ground lifeless". The perception of "mushroom cloud from an atom bomb detonation" is indicative of flared up aggression which needs to be addressed in therapy. The use of the word "lifeless" for a non-living object (teddy bear) is indicating a depressive feature which is also present in image 3. His overall response is suggestive of unwanted difficult childhood and possible conflict with parental figure(s).

Image 5: The client projected “Guy dancing towards an apple? Why would one be so happy to find an apple? I would understand if this was an orange.” The client being a male has not been able to perceive “dancing lady”, it may indicate a traumatic experience from a female. The avoidance of the perception of female figure is indicative of poor interpersonal relationship or conflict with the opposite sex.

Image 7: The client perceived “Giant ear standing at a door? Reminds me of my mother”. The use of the word "giant" and the entire perception of the image when paired with the memory of the client is indicative of suspicious attitude and lack of trust.

Image 10: The client saw “Chest cavity, X-ray? Or two evil eels/sea creatures with tiny sharp teeth eating meat. Left creature looks very grim for some reason.” The perception of "chest cavity" indicates psychosomatic preoccupation - anxiety about either one’s own health or someone else. The other response indicates aggression. The perception of "grim" looking creature on the left is again indicative of depressive features.

Image 11: The client viewed it as “Very scary, carcass of a rabbit head looking straight. Almost satanic, the heart shaped red makes it scarier and uncomfortable”. The response “very scary- carcass” indicates anxiety and fear from a threatening situation which he is aware of. Seeing a carcass of a rabbit is indicative of interpersonal timidity followed by disgust and feeling of helplessness/hopelessness. The response “Satanic’ indicates conflict between superego and guilt which must be explored during therapy sessions.

Image 16: The client perceived as “Baby inside a belly but is crying or sleeping. Looks like there can be two faces.” The perception of "two faces" indicates suspiciousness. A crying baby indicates his depressive features and suffering.

Image 19: He viewed it as “Person looking inside/at an egg. This image is exhausting to look at”. The response on this image is indicative of a difficult relationship with his father. Also, the perception of a person looking inside/at an egg is symbolic of regression. The client is feeling unsafe/ insecure about something in his life and is seeking safety by regressing into a state of fetus.

Image 21: He perceived this image as “Knives flying at something with no escape because the black barbed wires, not clear what they are attacking or cutting.” Perceiving knives thrown at someone/something, being attacked indicates uncontrolled hostility and aggression. The client's current situation is serious where he is finding no resolution or way out of it.

Image 24: He viewed it“Looks like a playing card which can be played as an action, something related to heart-breaking because it can’t latch on something. Or a bigger heart consuming other little ones to fix its cracks?” The response is indicative of frustrated relationships and broken affairs, which should be explored during therapy. The client’s response also reflects compensation as a defense mechanism here.

Image 27: The client projected “Baby embryo looking at its mirror image?” Two babies is a normal response, but the embryo represents a sign of regression - a repeated theme of defense mechanism.

Image 28: He perceived it “A version of "the thinker”. Sitting and contemplating”. The client’s avoidance of the common response of the mother hugging the child indicates his disturbed relationship and conflict with the mother/ mother figure.

Conclusion:

On psychodynamic content analysis of both cases, it is evident that both clients have a common theme of flared up aggression, anxious features and disturbed relationship with opposite sex (In the first case, it was with his spouse and in the second case it was with his mother). The repeated theme in case of Mr. A was of aggression, couple conflict, a sense of helplessness, and spirituality as a way out of one's misery. Whereas, the repeated theme in case of Mr. B was depressive content, aggressive attitude, distrust and desire to regress as a way out of one's suffering. Both clients are currently undergoing psychotherapy. It is interesting to notice that the SIT assessment aided the process of rapport formation and a good therapeutic alliance with both clients.

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SIS CERTIFICATION

Be a certified trainer and practitioner of Somatic Inkblot Test. The Participants will be certified by International Somatic Inkblot Society. The certificate program is open to Psychiatrists, Clinical Psychologists, Psychologists, Psychiatric Social Workers, and HR Professionals.

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PTSD and 'Unfinished Business': Can SIS images lead to Re-experiencing and Gestalt Closure?

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Animal attack on human beings is a rare phenomenon and those who are living in the forest buffer zone areas are at greater risk. In this paper we present the report of a 21-year-old unmarried lady who was exposed to the mutilated body of her father who was killed in a tiger attack and was diagnosed as having post-traumatic stress disorder. The relational dialogue with her using Somatic Inkblot Test (SIS-II) is described and an analysis of her responses are provided, which led her to being free from her embodied disturbances. Using SIS projective images may facilitate the 'contact-full, dialogical-relational nature of gestalt work' and can help in processing the painful 'unfinished business' caused by a traumatic event.

Tiger attacks are considered as stray incidents and as accidents that are caused in the interface between people and animals living in buffer zones. As per the official report, India has recorded 113 human casualties/deaths due to tiger attacks from 2013-14 to 2016-17 and 1224 casualties/deaths due to elephant attacks during the same period (Government of India, 2017). The trauma and panic it can cause on the survivors vary from region to region. The Post Traumatic Eco-Stress Disorders (PTESD) of the 'tiger widows' of Sunderbans, West Bengal (Chowdhury et al 2013) and the impact of tiger attacks on the people are documented both from qualitative and quantitative perspectives. The prominent among the reactions is the stigma with which the women continue to live and are marginalized due to the cultural belief system the community holds towards them (Chowdhury et al 2014). They are being perceived as 'one who eats her husband' and they are seen as 'inauspicious and evil' and as a result are isolated, branding them as people with 'divine curse' from the community which puts them into economic hardships in addition to the psychological trauma.

The probable consequences the tiger attack can have on their children and grandchildren make the women more vulnerable. The male children, having to discontinue their schooling, often take up a vocation at a young age, mostly that of their fathers and on the other hand the girl children suffer being out-casted, leading to low prospect of marriage and sexual exploitation (Chowdhury et al 2014). In Karnataka, 5 deaths were reported due to tiger attacks in the year 2013-2014 and it is not known how it has impacted the survivors (Government of India, 2017).

Unfinished business means the need for oneself to 'complete the incomplete' and there are several of them which an individual needs to work with. From a gestalt therapy perspective, the manifestation of PTSD may be viewed as 'unfinished businesses' related to the traumatic event that one was exposed to (Cohen, 2003). There need not be a temporal relationship with the traumatic event and the manifestation of the unfinished business. Greenberg, et al, (1993) observed that unfinished business can be arising from, "…traumatic, stress-inducing situations or victimization experiences involving tragic loss, violent death, disaster or abuse" (p. 242). The symptoms of PTSD seemed to demonstrate two processes. Apart from an attempt to 'assimilate an experience that is impossible to assimilate' there is also an 'expression of an underlying organismic need to finish some unfinished aspect of the trauma'. It may well be understood as the, 'repeated unsuccessful attempts at completion of the contact cycle or the experience cycle (Cohen, 2003).

The contact cycle as described by Zinker (1977) and modified by Clarkson,(1989) involves the process of sensation, awareness, mobilization, movement or action, contact, satisfaction, resolution/closure, and final stage being withdrawal after which the individual is free for another sensation to take on in the fertile void.

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In other words, a healthy organism processes the organismic need in this process of figure formation and 'destruction'. Another viewpoint raised by Melinck and Nevis (1988) on the process of resolving the unfinished business in relation to PTSD suggest that the symptoms manifest as a result of the inability of an individual to 'absorb and digest an experience' and prevent disengagement. Probably, the PTSD symptoms are a manifestation due to the incomplete contact cycle leading to demobilization.

The therapeutic usefulness of SIS-II (Cassell, 1990, Cassell and Dubey, 2003) was documented in relation to somatoform disorder (Manickam & Suhani, 2003) and to psychogenic cough (Manickam, et al, 2013). The SIS test was found to be an effective therapeutic tool in working with persons who had post-traumatic stress disorder (Cassell, 2006; Cassell et al, 1999, 2014; Cassell and Dubey, 2010, 2017). The present casestudy illustrates how working through SIS-II images from a gestalt therapy perspective hadhelped a person to unravel the unfinished business, get over the fixed gestalt, make the contact cycle complete and promoted a gestalt closure.

Case Report:

A 20-year-old unmarried lady educated up to higher secondary and homemaker, hailing from a joint family living in the suburban area near the forest consulted the Department of Psychiatry, JSS Medical College Hospital, Mysuru. Three months prior to her consultation she had 'hyperventilation' and was admitted and treated elsewhere symptomatically when the symptom first occurred. She continued to have mild disturbance on and off, and on the day of consultation, she had exacerbation of the symptoms of 'hyperventilation' which lasted for about 1 hour and the family members brought her to the hospital. Investigations did not show any physical cause for the manifestation of the symptoms.

There was a temporal relationship between the present reemergence of her symptom and a family conflict that was going on between her grandmother and other members in the family. During this time, she overheard her grandmother expressing that she has not been given adequate care by the family members and expressed that she would go out and end her life. This reminded the patient of her grandfather who died in a tiger attack prior to the onset of her initial symptoms.

Three months before the visit to the clinic, her 54-year-old grandfather, a farmer while tending his cattle close to the forest, was apparently attacked by a tiger and dragged him away. Only the head and the limbs of her grandfather were intact, and the torso was consumed by the animal that attacked him. She happened to see the body of the grandfather when it was brought home. The next day she developed anxiety and palpitation and was feeling extremely tired, whenever, she remembered her grandfather. This continued, on and off, till her present consultation. Around this time, 4 other tiger attacks and 3 related deaths were reported from the same area within a span of 6 months and it created panic among the people living in the buffer zones of the forest area.

Her father died of cancer two years before her clinical visit. There was no other significant family history. She was reported to have good interpersonal relationships with family members and was dependent on them and had difficulty in making decisions on her own. Based on the history, clinical evaluation and investigations, she was diagnosed as having PTSD (ICD-10, F43.1). In order to aid the psychotherapeutic process, SIS-II (Cassell, 1990) with 62 images was administered to her.

Findings and Discussion:

There were 69 responses on SIS II which indicate her high imaginative capacity, high productivity and high level of functioning intelligence. It also indicates active involvement and interaction with the outer world. She gave 12 Most Typical and 22 typical responses which indicates coherent, logical thinking and an ability to keep up with the demands of society. Often such individuals exhibit conventional ways of thinking and good interpersonal relationships.

There were 17 Human Movement (M) responses, and only 2 Animal Movement (FM) responses. A high number of Human Movement responses with high percentage of H and MT responses are associated with

high fantasy, creativity, active involvement and good interpersonal relationships. The high M is also correlated with introversive style of personality. There were 12 Animal responses and 3 Animal detail (Ad) responses which indicates her frustration, immature thinking, aggressive attitude and suppressed hostility which need to be addressed during therapeutic intervention. The seven anatomical responses are indicative of preoccupation with somatic symptoms. There were no pathological signs and it validates the fact that clinically there were no persecutory ideas or delusions expressed by the person.

A. Psychodynamic interpretation of the responses:

A few significant responses are interpreted using content analysis:

Image A3: "Looks like a ghost. It was in the news that the ghost was walking on the street". This might indicate the scary feeling of past trauma and fear of death.

Image A7: "Doll". Dancing lady is the most common response on this image which she avoided to perceive. This may indicate that the happiness from her life has apparently gone away. It might be the impact of trauma which she has undergone in the past.

Image A9: "Two birds". Instead of perceiving male and female, or any two persons on this image, she has viewed it as "two birds", which may indicate poor interpersonal relationship with the opposite gender.

Image A14: "A person standing in a boat in a sea" indicates her pensive mood and desire to be away from her family.

Image A21: "A man with long clothes trying to scare" may indicate fear from authority figure/father-figure. This is confirmed from her family case history. She has also avoided perceiving two human children which may indicate disturbed interpersonal relation with the father/authority figure.

Image A23: She viewed this image as "scorpion" a pain inflicting insect. Normally people perceive it as "spine". This might be due to the spinal injury happened to the grandfather during the tiger attack or sexual conflict. Females with sexual trauma may reject this image because it symbolizes the male phallic region.

Image A25: She perceived it as "May be eyes" which appears to be a symbolic representation of female genitalia- a normal response. The eye may also indicate suspicious attitude and paranoid ideation which must be kept in mind when she gets back to therapy session.

Image A27: She viewed this image as "Jog falls – water flowing" and avoided the common response Breast. It clearly indicates conflict with mother-figure which was supported by her response on image B28 where she has avoided perceiving "mother and child". "The waterfall –water flowing" is also a symbolic representation of satisfying erotic desires.

Image A30: A ghost mask. (ghost) may indicate timidity, paranoid tendency and concealment of true self.

Image A31: A boy and girl talking to each other may indicate her desire to have loving relations.

Image B1: "A person standing and watching a waterfall". The theme of image A27 is brought back which indicates a symbolic representation of satisfying erotic desire.

Image B2: "A person on fire" may indicate her distress and painful situations of the past. This distress must be addressed during long term therapeutic intervention.

Image B6: "An owl is standing" may indicate inadequacy and negativism.

Image B27: "A doll telling something to another doll" may indicate sharing of very personal feelings to some very close friend. This may also indicate that the client wants to share her personal thoughts and feelings with the therapist.

Image B28: Mother loving the child is the common response. Instead of mother and child, she has perceived it as "man" and "monkey" which may indicate conflict with mother.

Image B31: She viewed this image as "Children playing the train game".A family of father, mother and two children is the most common response on this image. It indicates a smooth relationship among family members and happy childhood with parents. Rejection of this theme may indicate poor interpersonal relationships between parents and children or among close family members.

B. Gestalt therapy perspective of the responses:

A content and 'process' analysis of her responses to the perceptual **sensation** provided by the images suggest that the individual was moving through the contact/experiencing cycle which Clarkson (1989) described while she was taking the SIS test. In the initial phase, she gave 5 responses related to ghosts and masks that suggested her **awareness** about the unfinished event (A3 'Looks like a ghost. It was in the news that the ghost was walking on the street'; A, 24, 'Mask'; A 26, A 30, 'A ghost mask'). Apart from these, there were responses of disfigured person or person in distress like heartbeat, (A20), 'A man with long clothes trying to scare' [A-21] and 'As if someone is coming' (A-4); A person is standing in a boat in a sea (A-14). It appeared that the 'deceased person' was the response in several images, which was like an 'exposure' and re-experience to her. Her response in the second set B1, 'A person standing and watching a waterfall' and B2 'Person on fire may indicate the inner turmoil or the 'unfinished business' that were expressed during the middle phase of the administration which may have **mobilized** her towards making the contact.

As she moved further, she viewed image B-4, as 'Somebody is saying something to a child'; B-5 'Somebody is teaching something to someone'; B-12, 'A person standing on a tree' suggesting that she has mobilized herself to the **final contact or the closure.** The response on B-29, 'A man walking on one leg', is a "most typical response" and is congruent with her being in contact with herself. The ending responses on B-31, 'Two people folding their hands' suggest **satisfaction.** Another responseon B-31, "Children playing the train game" may indicate the gestalt closure occurring and the person **withdrawing** from the contact and being in the phase of **fertile void** (Clarkson,1989) for further sensation/figure to emerge.

The only image that she rejected was B18, which may indicate sexual conflict, which the unmarried client avoided to share further in the initial phase of the therapy. The denial of typical sexual responses on sex cards may also be an indication of sexual conflicts that the individuals may have (Manickam & Suhani, -2014). Since the disturbance with which the person consulted has come to a closure, it may be taken up when it comes as a 'figure' for her. In our cultural contexts women especially from rural areas do not give 'permission for themselves' to seek professional help, when they experience sexual disturbance and it stays as 'unfinished business' for them and often develop 'somatic complaints' to reach the helping professional at a later stage (Manickam, 2020). Unless the therapists are sensitive enough, the women do not get the due consideration to explore their sexual problems (Manickam, 2019).

The interpretation of the responses from a psychodynamic perspective suggests that she needs long term therapeutic engagement and SIS has brought out the areas that require further exploration and process.

From a gestalt perspective, it is evident that the SIS images help the process of relational dialogue in contacting the person and in turn helps one to become aware of 'fully in contact' with oneself (Finlay, 2016). It was also interesting to see that the person who had the 'fixed gestalt' wherein the projections have become 'a fixed way of seeing the other' was found to be evolving as the person progressed through seeing the 'creative images' of Somatic Inkblot Test and led to change. The client was free of the symptoms by the end of the session and was symptom free during the follow up period. Since SIS images have been effectively used to study the therapeutic change, (Mishra et al 2020), it may be worth administering to the same person after an appropriate interval to see the types of responses that are likely to emerge and its relation to the clinical status.

Conclusion:

Post-traumatic stress disorder related to tiger attack and the administration of SIS-II assumes importance since the process of administration itself has led to therapeutic change. From a psychodynamic perspective, there are several unconscious processes that came up that need to be addressed during a longer duration of therapy. Though a single case report does not give us sufficient data to generalize, it would be interesting to 'experiment' from a gestalt perspective how the widows of those who died out of tiger attack in Sunderbans and who had PTSED (Chowdhary et al, 2013) would respond to the SIS images and work through the

unfinished business which in turn can be therapeutic. The potential of SIS images to evoke 're-experiencing' (Cohen,2003) that can lead to gestalt closure may be further explored through well-designed randomized controlled studies involving more participants and the results may help draw more meaningful conclusions that can be generalized.

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6	Journal of the Medical Association of Thailand	Thailand	English, Thai
7	British Journal of Psychiatry	UK	English
8	Acta Psychiatrica Scandinavica	Denmark	English
9	Salud Mentale	Mexico	Spanish
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14	South African Journal of Psychology	South Africa	Afrikaans, English
15	Psychological Reports	USA	English
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