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Editorial:

Positive Psychological Assessment: The Contribution of Projective Techniques

Historically, psychological assessment has had a focus on the pathological (or dysfunctional) aspects of human behavior or mental processes (Piotrowski et al., 1985). Conversely, the humanistic psychology model offered an alternative perspective, based largely on the healthy and constructive aspect of human functioning. The main tenet of the positive psychology movement is that individuals possess inherent psychological attributes and strengths that serve to buttress everyday challenges and hardships. Hence, human strengths develop out of adversity and tend to promote optimal functioning (Lopez & Snyder, 2003). In this context, psychologists formulated a myriad of constructs that depicted positive attributes of mental life. The ultimate outgrowth of this model instilled a new paradigm in the emerging field of mental health assessment, namely, positive psychological assessment (see Owens & Woolgar, 2018; Owens et al., 2015). A prominent proponent of this movement was Constance Fischer who promoted and emphasized a strength-based, humanistic approach, based in part by a collaborative therapeutic framework (Fischer 1979, 1992; Fischer & Finn, 2008). Over the years, the focus on client strengths has garnered much research attention (see Shogren et al., 2017; Spalitto, 2004). More recently, researchers have conducted extended investigations on the Strengths Use Scale which is predominantly applied in educational settings (van Zyl et al., 2021).

Since positive psychological assessment is an emergent field, it would be instructive to examine the scope of individual tests and measures represented in research reflecting this area of study. To that end, a *keyword* search of the database *PsycINFO* identified some of the predominant measures evident in studies appearing in journal articles. Table 1 presents results for research on the subject matter under the term 'Positive Psychology' and 'Positive Psychological Assessment'.

Table 1

Positive Psychology	***Positive Psychological Assessment***
Satisfaction with Life Scale	Meaning in Life Questionnaire
Positive and Negative Affect Schedule	Adult Attachment Scale
Positive and Negative Affect Scale	Beck Hopelessness Scale
Subjective Happiness Scale	Conner-Davidson Resilience Scale
Meaning in Life Questionnaire	Core Self-Evaluations Scale
Rosenberg Self-Esteem Scale	
Gratitude Questionnaire-6	
Values in Action Inventory of Strengths	

The Case for Projective Techniques:

Historically, few proponents of projective methods concentrated on examining the positive characteristics expressed by clients evident in the assessment process or projective test findings. But there have been exceptions. In reference to the clinical study of play, Russ (1999) argued for the utility of emphasizing the positive in assessment. Other clinicians incorporated positive features of drawings, including human figure drawings (e.g., smiley face), in assessment reports (Burkitt & Barrett, 2011; Gramel, 2005). Yet, based on an incisive overview of the field, the extant literature on positive constructs

involving projective testing appears (on the surface) somewhat limited. Of interest, Piotrowski (2023) reviews this literature pertaining to the issue of happiness.

Hence, it would be informative to examine the extent of influence of positive psychological assessment with regard to projective techniques. From a conceptual perspective, it would appear that apperceptive tests (e.g., TAT) and Sentence Completion measures would be highly amenable to the production of positive psychological states or responses, given the open-ended and highly non-intrusive nature of projective assessment. To that end, a keyword search of the database *PsycINFO*, where each projective techniques was coupled with a myriad of positive psychology constructs noted in the positive psychology literature (see Owens et al., 2015, for lists of constructs). Both test and construct needed to appear in the *Abstract* of the study reference. Table 2 presents the research output for this bibliographic exercise. Indeed, these results show that positive constructs are well represented in studies using or referencing the TAT and Sentence Completion measures. This was evident for both research articles and dissertation research.

Table 2.

Construct	***n* of articles**		***n* of dissertations**	
	TAT	Sentence Completion	TAT	Sentence Completion
Emotions	21	21	19	9
Self-esteem	14	28	10	11
Hope	11	4	3	4
Attachment	8	11	22	14
Humor	5	2	3	0
Happiness	3	4	2	2
Well-being	2	16	4	6
Spirituality	2	2	2	4
Optimism	2	4	1	1
Resilience	1	3	2	5
Quality of Life	1	4	1	2

I briefly note several articles that discuss the nexus of projective techniques and positive psychology. Fischer (1994) explored the confluence of the process of the Rorschach examination with personal ‘dynamics’ of dealing with reality. Scioli et al. (2018) propose a measure of hope derived from 6 Rorschach variables representing interpersonal perceptions, coping resources, and goal engagement. Based on a transformative model for personal development, Coffman (2001) utilized a thematic apperception measure in the evaluation of competence and experience of flow. Benson (2000) studied the significance of self-reported happiness on TAT cards, based on a positive psychology framework; individuals with high levels of happiness exhibited high valence ratings on Cards 10 and 17BM.

In conclusion, research on measures reflecting a positive psychological orientation serves as a significant contributory factor in the application of humanistic approaches in mental health treatment (Bartholomew et al., 2015). Moreover, the influence of positive psychology tenets applied to mental health assessment has expanded worldwide (e.g., Singh, 2011). Proponents of positive psychological assessment, both in research and practice, should welcome the contribution that projective techniques offer with regard to positive characteristics and strengths encountered in mental health evaluations.

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Scoring Accuracy and Rorschach Coding of Form Dominance in Shading and Achromatic Color Responses

Anthony D. Bram, Donald J. Viglione, Oren Lee-Parritz, Kiley A. Gottschalk, Jed A. Yalof, Ksera Dyette, Ali Khadivi, James H. Kleiger & Giselle C. Goldfischer

In coding observational and performance data, researchers have favored a focus on interrater reliability (agreement of coders with each other) over scoring accuracy (agreement of coders with expert ratings). Often, an implicit assumption is that establishing interrater reliability implies acceptable scoring accuracy, but this is not necessarily the case. This study reports scoring accuracy of four experienced Rorschachers in coding 155 responses for Form Dominance in Shading and Achromatic Color (FDSHAC) determinants using Viglione's (2010) guidelines augmenting those from the Comprehensive System (CS; Exner et al., 2001). These determinants were of interest since these (a) are low-base rate and difficult for new learners, and previous findings have been mixed regarding their interrater reliability, (b) have been eliminated by the Rorschach Performance Assessment System (R-PAS; Meyer et al., 2011), yet (c) are still considered valuable for inferences related to ego involvement in affect regulation. In this study we compared findings of scoring accuracy to those previously reported on interrater reliability in the same data set (Bram et al., 2023) and found similar patterns. Coders exhibited strongest accuracy in rating the levels of Form Dominance of Texture and Form Dominance of Achromatic Color. Accuracies for Form Dominance of Diffuse Shading and Form Dominance of Aggregate FDHAC were comparatively modest but more than acceptable. The most challenging variable to code accurately was Form Dominance of Vista; and among the levels of the Aggregate and individual FDSHAC's, Form Secondary was the most difficult to code and had greatest variability. We discuss the need for further refinement of training for coding FDSHAC, and we make a case for increasing attention to scoring accuracy in research and clinical contexts.

Introduction:

In coding observational, narrative, and other performance-based data such as the Rorschach, there are two ways of evaluating the consistency of such coding: *interrater agreement* and *scoring accuracy* (Meyer et al., 2002). Interrater agreement, more commonly referred to as *interrater reliability*, captures consistency in coding across two or more raters. Scoring accuracy refers to the degree of agreement between raters and some established benchmark, gold standard, or expert rating. Both interrater agreement and scoring accuracy provide complementary vantage points, and the hope is that in research studies it is possible to demonstrate both. This is not, however, always the case. For example, consider a study involving various health care professionals' use of the Global Child Assessment Scale (CGAS; Shaffer et al., 1983) to rate five vignettes describing behaviors and attributes of children and adolescents (Lundh et al., 2010). The investigators found that although the professionals—themselves not formally trained on the CGAS—demonstrated an acceptable level of interrater reliability (i.e., agreement among each other), they consistently rated the children's and adolescents' functioning higher than experts who were trained and experienced with the measure. In other words, the healthcare professionals' scoring accuracy was more suspect: Even though interrater reliability was solid, this group of raters still missed the mark in a way that in clinical practice holds potential for deleterious impact. Based on over-estimation of levels of functioning—thus overlooking vulnerabilities—it is possible to imagine some young patients being deemed not in need of treatment or being prematurely discharged.

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Keywords: Rorschach, scoring accuracy, coding accuracy, form dominance, shading, achromatic color

Despite premises that both interrater reliability and scoring accuracy have value and that establishing the former does not necessarily imply the latter, it is striking that within the psychology assessment literature in general, there has been disproportionate emphasis on interrater reliability. Bibliographic searches of the database PsycINFO identified articles, book chapters, and dissertations/theses between the years 2000 and 2023[1] and revealed 349 titles containing the words "interrater reliability" or "interrater agreement" and only 29 with the words "scoring accuracy" or "rating accuracy." That is to say, there were over 12 times as many articles on interrater reliability. Using the same search parameters but specifying that "Rorschach" also be included in the title revealed 10 hits for interrater reliability or interrater agreement and only 2 for scoring accuracy or rating accuracy (one a dissertation). Modifying the searches, keeping Rorschach as a query for titles but broadening search terms to interrater reliability/interrater agreement versus scoring accuracy/rating accuracy as found *anywhere in the text*, we found 66 hits for the former and just 4 (3 of which were theses/dissertations) of the latter. Clearly, although issues of reliability and coding stability have been attended to in the Rorschach literature (Piotrowski, 2017), scoring accuracy has received limited psychological research in general and in Rorschach studies in particular. Guarnaccia et al. (2001) noted: "Readers of published research in which interscorer reliability is reported can only presume that independent scorers had agreed on the correct score, but this may not actually have been the case" (p. 465).

In what we have found to be likely the only published Rorschach research article on the topic over the past two-plus decades, Guarnaccia et al. (2001) examined scoring accuracy among groups of (a) doctoral students who had recently been trained (25 hour of training) on the Comprehensive System (CS; Exner, 1986) and (b) practicing psychologists who used the CS in their clinical assessment. These investigators made use of 20 scored Rorschach responses—balanced between those from patients and non patients—that had been published by the originator of the CS (Exner, 1986) or a well-known CS expert and author (Weiner, 1998). Guarnaccia et al. found that although both groups were close to or above acceptable levels of scoring accuracy (defined as > 80% agreement, as was the convention at the time) at the response level[2] relative to the expert coding for the non-patient response, both groups were each well below such acceptable levels of accuracy for the more complex and challenging-to-code patient responses. With a sense of alarm Guarnaccia et al. concluded:

> If the error rates found here are representative of what occurs in the field, then we are faced with a major professional problem that requires immediate attention. Perhaps it would be desirable to require some kind of certification process to ensure that clinicians who use the CS are able to score responses to a minimum level of accuracy." (p. 473).

In a dissertation completed a decade after Guarnaccia et al.'s (2001), Burke (2011) used a similar design involving students and experts coding previously published scored Rorschach CS patient protocols and reported more promising findings. Burke found, on the whole, that both groups of coders showed acceptable levels of scoring accuracy (defined as Kappa > .40).[3] Still of concern, though, was that both the expert and student coders "displayed fair and poor levels of scoring accuracy on the variables identified in previous studies as low base-rate variables" (p. 82), and that this had implications for the clinical hypotheses generated from such variables. Among such low base-rate variables showing concerning levels

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[1] Searches were conducted at the end of July 2023, so the full year of 2023 was not represented.

[2] Extrapolating from Meyer et al. (2002)'s discussion of interrater reliability, there are three vantage points to evaluate coding accuracy of Rorschach variables, each addressing different questions: (a) scores at the response level (e.g., whether a particular code is present versus absent in each response), (b) segments of scores at the response level (agreement about coding decisions *within* a particular scoring category such as Location, Determinants, or Form Quality), or (c) scores at the protocol level (aggregated response-level scores). In the present article, our focus is on segments at the response level, specifically determinants involving Form Dominance of Shading and Achromatic Color (FDSHAC).

[3] Burke also found that, overall, both groups displayed acceptable levels of scoring accuracy at the protocol level and in terms of clinical interpretations.

of scoring accuracy were those involving coding of Form Dominance in Shading and Achromatic Color (FDSHAC) determinants: C'F, C', TF, T, FV, VF, V, FY, YF, and Y. This is largely consistent with previous mixed findings of interrater reliability of these low base-rate variables (reviewed in Bram et al. [2023]) and the difficulty that novice learners report mastering these codes (Viglione et al., 2017).

In large part, because of such difficulties involving low base rates and mastery by new learners, the authors of the latest Rorschach approach, the Rorschach Performance Assessment System (R-PAS; Meyer et al., 2011), eliminated coding of FDSHAC. In other words, in R-PAS, coding of all Shading (Diffuse Shading [Y], Shading-Texture [T], Shading-Vista [V] and Achromatic Color (C') determinants is made irrespective of the role of Form Dominance. So, for example, *any* determinant involving Diffuse Shading is coded simply as Y; in contrast to the CS and earlier Rorschach systems, there are no distinctions made among FY, YF, and Y. Although there is an understandable psychometric and pragmatic case for drop coding of FDSHAC, for psychoanalytic assessors for whom the role of Form Dominance informs inferences about ego involvement (or the role of cognition or frontal lobal activity) in affect-laden responses (Kleiger, 1997), something of value has been lost with this decision (Bram & Yalof, 2018; Bram et al., 2023). Coding FDSHAC (as well as Form Dominance for Color, which *is* retained in R-PAS) plays a central role in the application of psychoanalytic configurational and sequence analyses that illuminate aspects of a patient's style and effectiveness of emotional regulation (Bram & Peebles, 2014; Schafer, 1954). The idea is that not all responses coded Y (or T, V, or C') are the same in what they tell us about a person's ability to contain or become dysregulated by anxiety or dysphoria. Consider the coding of three responses to location D7 or W of Card IV:

> *Patient A*: "A person…like a person, may be a ghost, any way sort of ominous. (CP) Shaped here like a person or ghost (ominous?) I guess, just the haziness of it. (haziness?) The lighter and darker contrasts."
>
> *Patient B*: "Some kind of apparition. (CP) It's hazy, the light and darkness, but it's kinda in the shape of a person, so I guess like a ghost.
>
> *Patient C*: "I don't know. Maybe, something creepy, kind like an apparition. (CP) Not sure exactly what kind of apparition, but I get kind of a creepy sense. (apparition?) Like I said, creepy. (creepy?) The haziness, where it gets lighter and darker.

Applying R-PAS, each response would be coded Y, but this obscures distinctions among the three patients in how they are able to manage the anxiety stirred by the shading of Card IV. When Form Dominance is taken into account, Patient A's response garners an FY, reflecting that their evoked anxiety is fairly well contained by their cognition (the manifestation of ominousness / anxiety [Y] is structured from the outset by the shape/idea of a person or ghost). Patient B's response, meriting a YF, involves anxiety (Y) that is relatively less contained (the idea/shape of the person/ghost is less definitive ["kinda," "I guess"] and, more importantly, offered a bit later in the clarification after the emphasis on shading). And Patient C's response would be coded pure Y as the anxiety/"creepy sense" is not cognitively organized into a discernible structure (an unelaborated apparition does not have an unequivocal form). Although we would not draw any overarching conclusions based on a single response in the absence of repetition and convergence from other Rorschach and non-Rorschach data (Bram & Peebles, 2014), the coding of each of these responses would contribute to contrasting inferences about how well the respective patient manages anxiety.

In an effort to demonstrate that FDSHAC *can* be coded reliably and accurately and thus merits consideration from contemporary assessors, even those who use R-PAS, we conducted a study that implemented Viglione's (2010) detailed coding guidelines that supplement instructions from Exner's et al. (2001) workbook. We recently published our findings from the interrater reliability component of the study

(Bram et al., 2023). In this present article, we offer and discuss our findings with regard to scoring accuracy.

Method:

Details of our methodology are explained more fully in Bram et al. (2023), but some essential elements are summarized here.

Raters:

Our four raters were experienced assessment psychologists with an average of over 30 years of Rorschach experience, CS and R-PAS combined. All had experience teaching and/or supervising the Rorschach.

Training:

Raters received training packets that, among other materials, included: pages of the R-PAS manual describing how to code the presence of Shading and Achromatic Color (SHAC) determinants; Chapter 3 from Viglione's (2010) *Rorschach Coding Solutions* detailing scoring of FDSHAC determinants; and a coding FDSHAC flowchart based on those guidelines from Viglione (2010; flowchart included in online Supplement S1 of Bram et al., 2023). As preparation for the study, raters coded—and received feedback on—20 Rorschach responses taken from Exner et al. (2001), 18 of which involved a FDSHAC determinant.

Rorschach Responses and Protocols:

There were 155 Rorschach responses to be coded, nearly three-quarters (115) of which involved an FDSHAC determinant. Such responses included a mix of levels of Form Dominance (Form Dominant, Form Secondary, and Formless) for Shading (Y, T, V) and Achromatic Color (C') determinants. All but five of the 155 responses were culled from CS- or R-PAS-administered child and adult patient protocols from the (mostly outpatient) practice of the first author. The responses were presented to raters in the form of six constructed "protocols" each consisting of between 25-27 responses that included both response phase/free association and clarification phase/inquiry for Cards I through X.[4] Raters coded only determinants.

Expert/Benchmark Coding:

Prior to coding by the four raters, determinants for each of the 155 responses were scored by consensus between the first two authors, the second of whom is an expert who authored *Rorschach Coding Solutions* that included the elaborated FDSHAC coding guidelines. The first author had previously studied, applied these guidelines clinically, and consulted with the second author in preparation for this project. The expert/benchmark coding utilized the same *Rorschach Coding Solutions* guidelines.

Data Analyses:

Average scoring accuracy was computed for the four raters with reference to our expert/benchmark ratings. Specifically, we aimed to analyze scoring accuracy coefficients on an ordinal Aggregate FDSHAC variable (capturing the relative involvement of Form in *any* response coded for Y, T, V, and/or C') as well as the four Specific FDSHAC ordinal variables, that is, separately for Form Dominance of Y (FDY), Form Dominance of T (FDT), Form Dominance of V (FDV), and Form

[4] To be clear, each "protocol" was constructed from the responses of many patients. Hence, these were not intact patient protocols. As responses were unidentifiable, this study qualified for an IRB exemption.

Dominance of C' (FDC').[5] We analyzed scoring accuracy of each of these variables three different ways, based on: (a) all 155 responses, (b) only the 115 coded for a SHAC determinant by the benchmark, and (c) for each Specific SHAC variable, only the responses coded by the expert/benchmark for that variable (33 responses for FDY, 27 for FDT, and 29 each for FDV and FDC'). The reason for the latter two versions of analyses relates to the relative ease of coding 0 when a SHAC determinant was absent, contributing to inflated accuracy coefficients especially when all 155 responses are analyzed. As we acknowledged previously:

> We understood the last two versions of analyses not to be truly fair tests of reliability because (a) the 0-point of the 4-point scales was essentially eliminated, creating an artificial 1-to-3 scale involving only the most difficult discriminations (between Form Dominance and Form Secondary *and* between Form Secondary and Formless) and (b) they are based on a relatively small number of items. Nevertheless, we included these because we believed them informative about difficult coding discriminations. (Bram et al., 2023, p. 4)

Average scoring accuracy will be reported using the following statistics: percent agreement, Fliess' Kappa, Kendall's Tau-b, and Gwet's AC2. In Bram et al. (2023), we offered the following rationale:

> Kappas adjust for chance agreement not reflected by percent agreement. But Kappas only credit *exact* agreement among raters, which is not ideal for ordinal variables where it is meaningful how close or apart inexactness is…. For another perspective, we also report Kendall Tau-b, an associational statistic crediting close-but-not-exact agreement but does not adjust for chance agreement. Finally…we report Gwet's (2014) AC2 statistic developed as an alternative to Kappa in that it corrects for chance but lowers the maximum theoretical value for chance agreement, takes into account closeness of inexact agreements, and weights unanimity of agreement according to number of raters (see Lewey et al., 2019). Our premise is that Gwet's AC2 is the [accuracy] statistic with the best fit for our ordinal FDSHAC variables coded by trained assessors. But we include the other statistics as they offer other vantage points for understanding patterns of [scoring accuracy].

Kappa and Kendall's Tau-b were interpreted according to conventional parameters for research on Rorschach interrater reliability (e.g., Meyer et al., 2002) and scoring accuracy research (Burke, 2011): < 40 *poor*; .40-.59 *fair*; .60-.74 *good*; > .74 *excellent* (Cichetti, 1994; Shrout & Fliess, 1979). Since Gwet's AC2 coefficients run higher than Kappas, a more stringent interpretive criteria was applied: < .50, *poor*; .50-.74, *moderate*; .75-.89, *good*; > .89 , *excellent* (Koo & Li, 2016).

Results:

We present findings for our four raters' average scoring accuracy relative to the expert/benchmark coding on the ordinal variables FDSHAC, FDY, FDT, FDV, and FDC'. In doing so, we embed brief comments about the extent to which findings related to scoring accuracy are similar to those of interrater reliability as reported in Bram et al. (2023).

Average Scoring Accuracy:

Table 1 displays mean, standard deviations, and 95% confidence intervals for scoring accuracy across the four raters on Aggregate FDSHAC and then on FDY, FDT, FDV, and FDC'.

[5] The ordinal FDSHAC variable was coded: 0=No SHAC determinant; 1=Form Dominant over any SHAC determinant; 2=Form Secondary to any SHAC determinant; 3=SHAC determinant with Form absent (Formless). The ordinal FDY variable was coded: 0=no Y; 1=FY, 2=YF, 3=pure Y. The ordinal FDT, FDV, FDC' variables were coded similarly.

Table 1
Scoring Accuracy for FDSHAC, FDY, FDT, FDV, FDC', and FDC Across Four Raters: Means, Standard Deviations, and 95% Confidence Intervals.

Ordinal Variable	Benchmark Criteria	# Items	SHAC Variable Not Coded	Form Dom	Form 2ndary	Formless	Total Agreement	Kendall Tau-b	Kappa	Gwet's AC2
Aggregate FDSHAC	-- SHAC>0	155 115	99.5% (1.00)	78% (4.79)	59% (18.27)	79.5% (11.81)	79% (4.43) 72% (6.55)	0.82+++ (0.04) [0.73-0.91] 0.65++ (0.08) [0.57-0.73]	0.71++ (0.05) [0.66-0.76] 0.56+ (0.09) [0.47-0.65]	0.86## (0.04) [0.82-0.90] 0.85## (0.05) [0.80-0.90]
FDY	-- SHAC>0 Any Y>0	155 115 33	94% (2.58) 91% (3.81) --	71% (4.50)	44% (17.91)	75% (9.23)	89% (3.28) 82% (5.40) 59% (11.09)	0.73++ (0.10) [0.63-0.83] 0.69++ (0.10) [0.59-0.79] 0.39 (0.16) [0.23-0.55]	0.64++ (0.11) [0.53-0.75] 0.62++ (0.11) 0.51-0.73] 0.42+ (0.12) [0.30-0.54]	0.92### (0.03) [0.89-0.95] 0.87## (0.06) [0.81-0.93] 0.64# (0.15) [0.49-0.79]
FDT	-- SHAC>0 Any T>0	155 115 27	98% (2.28) 97% (3.49) --	85% (9.39)	54% (10.40)	84% (19.05)	94% (3.59) 92% (4.39) 73% (6.06)	0.88+++ (0.09) [0.79-0.87] 0.85+++ (0.08) [0.77-0.93] 0.56+ (0.21) [0.35-0.77]	0.81+++ (0.09) [0.72-0.90] 0.79+++ (0.10) [0.69-0.89] 0.62++ (0.11) [0.51-0.73]	0.97### (0.03) [0.94-0.99] 0.95### (0.04) [0.91-0.99] 0.80## (0.10) [0.70-0.90]
FDV	-- SHAC>0 Any V>0	155 115 29	99% (0.96) 99% (1.22) --	46% (19.19)	39% (34.68)	47% (13.40)	89% (3.77) 85% (4.53) 47% (15.20)	0.75+++ (0.11) [0.64-0.86] 0.73+++ (0.12) [0.61-0.85] 0.32 (0.17) [0.15-0.49]	0.60++ (0.14) [0.46-0.74] 0.60++ (0.14) [0.46-0.74] 0.28 (0.19) [0.09-0.47]	0.95### (0.04) [0.91-0.99] 0.92### (0.03) [0.89-0.95] 0.43 (0.23) [0.21-0.66]
FDC'	-- SHAC>0 Any C'>0	155 115 29	97% (2.16) 96% (2.69) --	81% (5.50)	65% (22.97)	82% (21.75)	92% (1.83) 90% (4.15) 74% (7.69)	0.88+++ (0.06) [0.82-0.94] 0.86+++ (0.06) [0.80-0.92] 0.70++ (0.12) [0.58-0.82]	0.79+++ (0.10) [0.69-0.79] 0.78+++ (0.09) [0.69-0.87] 0.63++ (0.11) [0.52-0.74]	0.97### (0.02) [0.95-0.99] 0.95### (0.03) [0.92-0.98] 0.83## (0.07) [0.76-0.90]

Note. FDSHAC=Form Dominance in Shading and Achromatic Color. SHAC=Shading and Achromatic Color. FDY=Form Dominance in Diffuse Shading. FDT=Form Dominance in Texture. FDV=Form Dominance in Vista. FDC'=Form Dominance in Achromatic Color. Interpretive ranges for Kappa and Kendall Taub-b: +fair (0.40-0.59); ++ good (0.60-0.74); +++ excellent (0.75 and above) (Cichetti, 1994; Shrout & Fleiss, 1979). Interpretive ranges for Gwet's AC2: #moderate (.50-.74); ## good (.75-.89); ### excellent (.90 and above) (Koo & Li, 2016).

Scoring Accuracy for Aggregate FDSHAC:

The first row of Table 1 presents average scoring accuracy coefficients for the four raters on Aggregate FDSHAC. On separate lines, this row also provides coefficients for all 155 items and for the 115 for which the benchmark scored a SHAC determinant. The means and standard deviations reveal similar trends as the interrater reliability analyses (Bram et al., 2023): Analyses of all 155 items across all four points of the scale, reliability looks more than solid, including overall percent agreement of 79%, a good Kappa statistic over 0.70, and Kendall Tau-b and Gwet's AC2 above 0.80 (excellent and good respectively). When examining only the 115 items for which benchmark coded a SHAC determinant, we notice the expected drop off in the overall mean coefficients (72% agreement, good Kendall Tau-b, and fair Kappa), with the exception of Gwet's AC2, which hardly changes at 0.85.

Providing breakdowns in average percent agreement with expert/benchmark *at each level* of the ordinal scale, Table 1 also illuminates the relative weakness of reliability in coding Form Secondary to SHAC. Though agreement approaches 80% for the Form Dominance and Formless (Formless SHAC) categories, it is only 59% for Form Secondary. This is analogous to the finding for interrater reliability (Bram et al., 2023). We also noticed that Form Secondary to SHAC is the level possessing the greatest variability among the four raters' (SD=18.27), which in part captures the range between Rater 3's 40% agreement and Rater 2's 80% agreement for this most challenging category.[6]

Scoring Accuracy for FDY:

The second row of Table 1 displays average scoring accuracy coefficients across our raters in coding FDY, and again we see a pattern similar to the interrater reliabilities reported in Bram et al. (2023). In the 155-item analyses, Gwet's AC2 and Kendall Tau-b were excellent, and Kappa was good. In the 115-item analyses, Gwet's AC2 and Kendall Tau-b were good, and Kappa was fair. For the restricted 33-item set, overall Gwet's AC2 was moderate, Kappa fair, and Kendall Tau-b poor.

Interestingly, homing in on percent agreements within each of the levels of FDY, we observe that our raters were most accurate at the Formless Y level. Akin to the Bram et al. (2023) findings with interrater reliabilities, the YF category was the category most difficult for our group of experienced coders and the one with the greatest variability.

Scoring Accuracy for FDT:

Shown in the third row of Table 1, our four raters were impressively consistent with the expert/benchmark in ordinal coding of FDT. Gwet's AC2's, Kappas, and Kendall Tau-b's in the 155- *and* 115-item sets were all excellent. In the 27-item set, Gwet's AC2 and Kappas were good, and Kendall Tau-b was fair. The excellent Kendall Tau-b's in the first two sets of 0.88 and 0.85 help illuminate that when agreement with the expert/benchmark was not exact, it was quite close. Not depicted in the table is how remarkably close both Raters 1 and 2 were to the expert/benchmark in coding FDT (Gwet's AC2=0.99 and 0.98; Kappas=0.88-0.89 and 0.87-0.88, respectively) within the 155- and 115-item sets.

Examining percent agreement within each of the four categories of the scale, again it was the Form Secondary category —in this case TF—that was the relatively weak link: Mean percent agreement with the expert/benchmark for TF was only 54%, whereas agreements were 85%, and 84%, respectively for FT and Formless T.

[6]These breakdowns of each rater's consistency with benchmark are not included in Table 1 but are available from the first author. They are available not only for FDSHAC but for FDY, FDT, FDV, and FDC'.

Scoring Accuracy for FDV

The fourth row of Table 1 reveals a complicated picture of the four raters' consistency with the expert/benchmark's ordinal coding of FDV. Mean Gwet's AC2's for the 155- and 115-item analyses were excellent, and Kappas were in the good range. However, examining two other aspects of Table 1 reveal that these overall accuracy statistics are misleading as, on the whole, raters actually had difficulty with distinguishing among FV, VF, and Formless V: (a) mean percent agreement at each level of the 4-point ordinal scale and (b) mean AC2 and Kappa for the 29-item set. The average percent agreement with benchmark in each of the three categories were FV=46%, VF=39%, and Formless V=47%, suggesting that the AC2 and Kappas for the 155- and 115-item sets were inflated based on the considerable ease of scoring the *absence of Vista* (99%) on the ordinal scale. These percent agreements were weak across the board in comparison to average scoring accuracy for other specific FDSHAC determinants (FY=71%, YF=59%, Formless Y= 75%; FT=85%, TF=54%, Formless T=84%; FC'=81%, CF'=65%, Formless C'=82%). The weak average Gwet's AC2=0.43 and Kendall Tau-b=0.32 for the 29-item analysis (where expert/benchmark coded Vista so that a coding of V=0 [Vista absent] was unlikely) also captures this phenomenon where raters had great difficulty not only with exact agreement with the benchmark but also with coming close in their ratings on the ordinal scale.

Another finding that stood out in third row of Table 1 involved the considerable variability in coding VF (*SD*=34.68, the largest among all of the Form Dominance levels across Aggregate FDSHAC, FDY, FDT, FDV, and FDC ordinal variables) among raters in their ability to match with expert/benchmark coding. Rater 2 was able to apply Viglione's (2010) method to attain high levels accuracy, notably even in the most challenging VF category (89% agreement). In the 29-item analyses, which eliminate the common and easy "Vista Not Coded": level (coded 0), Gwet's AC2 for Rater 2's scoring accuracy on FDV was excellent at 0.76. On the other hand, the 29-item analyses for Raters 3 and 4 each yielded a poor Gwet's AC2 of 0.22. The 29-item analyses revealed Rater 4's difficulty coming close to the benchmark's distinctions among FV, VF, and V (Kendall Tau-b=0.14), but Raters 1 and 3 also struggled in the same way, albeit to a lesser extent (Kendall Tau-b's of 0.33 and 0.27, respectively).

Scoring Accuracy for FDC':

The fourth row of Table 1 presents the average accuracy among the four raters with reference to the expert / benchmark coding on the ordinal FDC' scale. Not only were the mean Gwet's AC2's in the 155- and 115-item sets excellent but so too were the respective Kappas and Kendall Taub-b's. And in the 29-item analyses, Gwet's AC2, Kappa, and Kendall Tau-b were all in the good range. The average percent agreement between raters and expert/benchmark within each of the coding categories was consistently strong (97% for No C', 81% for FC', 65% for C'F, and 82% for Formless C'). Even as C'F expectedly has the relatively weakest accuracy among the levels of FDC' it still represents the strongest accuracy in Form Secondary (65%) among all of the Specific FDSHAC variables (44% for FDY, 54% for FDT, 39% for FDV).

Discussion:

Using Viglione's (2010) guidelines, our four coders' pattern of scoring accuracy relative to expert/benchmark ratings on ordinal FDSHAC variables was largely consistent with their pattern of interrater reliability as reported in Bram et al. (2023). Similar to the findings with interrater reliability, among the Specific FDSHAC variables, our coders exhibited greatest accuracy in rating the various levels of FDT and FDC'. Accuracy rating the ordinal FDY and the Aggregate FDHAC variables were comparatively modest, but still more than acceptable. Similar to the findings for interrater reliability, the most challenging ordinal FDSHAC variable for our raters to code accurately was FDV. Also consistent with our interrater reliability findings, among the levels of the Aggregate and Specific FDSHAC variables,

Form Secondary (compared to Form Dominant and Formless) was the most difficult to code accurately and the level with the greatest variability among coders.

Perusing Table 1 displaying coding accuracy and the analogous Table 1 in Bram et al. (2023) showing interrater reliability, we notice that percent agreement, Kendall Tau-b, Kappa, and Gwet's AC2 tend to run a few points higher for accuracy compared to interrater reliability. This trend is expected theoretically because coefficients calculated between non-expert judges are lowered by error in each judge's rating, whereas with one judge being an expert in each comparison (e.g., Rater 1 with expert/benchmark, Rater 2 with expert/benchmark), the coefficient of agreement is affected by half as much error (Greg Meyer, personal communication, July 2023).

Even with somewhat higher coefficients for accuracy versus interrater reliability, the conclusions, limitations, and implications drawn in Bram et al. (2023) about the status of using Viglione (2010) to code FDSHAC remain apropos. Given the potential clinical yield of coding FDSHAC to assess level of ego involvement in regulating emotions (Bram & Peebles, 2014; Peebles-Kleiger, 2002; Schafer, 1954), there remains additional work to be done to improve the training of raters to apply Viglione's FDSHAC coding guidelines more effectively, particularly in accurately distinguishing Form Secondary from both (a) Form Dominant and (b) Formless. As our group of experienced raters had difficulty with this, it is likely that relatively novice Rorschachers would struggle at least as much, if not more. As described in Bram et al. (2023), there are key terms and concepts in the coding decision-tree that were likely unclear in the training materials that we provided to our raters and thus require improved explication. As refinements are made in the training materials and process, future research can overcome a primary limitation of this investigation by studying the accuracy of less experienced coders using Viglione's (2010) guidelines. Along these lines, it is worth highlighting that for a less experienced group, focusing on coding accuracy relative to expert/benchmark ratings would be more meaningful than focusing on interrater reliability as it would reveal to what extent the coders are accurately internalizing and applying the coding distinctions. As Guarnaccia et al. (2001) remind us, it is conceivable that such raters could have strong agreement with each other, but mostly still miss established benchmarks.

Although fortunately our findings did not realize Guarnaccia et al.'s (2001) cautionary tale that interrater reliability might belie scoring accuracy, their point is still well taken even if largely ignored in Rorschach research and general psychological assessment literature. Broadly, a case can be made that coding accuracy is even more important than interrater reliability "as all raters should aspire to the same standard" (Greg Meyer, personal communication, July 2023). At the same time, it bears acknowledgment that in many studies, it is not always possible to identify or access an expert to provide ratings. This does not mean, though, that this procedure should not be considered in study design. In some instances, it might be feasible for investigators to (a) enlist an expert to code a subset of responses/items for comparison with the study's raters and (b) report accuracy coefficients alongside those for interrater reliability.

We also raise for consideration the possibility that authors making the psychometric case for their instrument or coding approach publish findings specific to scoring accuracy. For example, R-PAS has coding (as well as administration) exams created to establish proficiency for Rorschachers contributing to normative data collection. It is conceivable that findings related to coding accuracy of the many variables could be disseminated through publication, calling attention to coding distinctions that are more versus less challenging and offering ideas to enhance accuracy in coding them.

Finally, based on the convergence between Guarnaccia et al.'s (2001) findings and the first author's experience as an assessment supervisor and consultant, in clinical practice Rorschach coding accuracy, especially at the response level, may not be as strong as we in the field would like to believe. To mitigate this possibility, one idea is that authors of the major Rorschach systems (Exner, Andronikof, & Fontan, 2022; Meyer et al., 2011) consider designing automated online checks of scoring accuracy. Potentially free or subscription-based (which might be necessary to cover costs of creating the service), this

could involve periodically posting new practice protocols for users to code and then providing statistical and qualitative feedback on accuracy relative to expert ratings and then directing users to sections in the manual and other training materials to redress domains of coding challenges. Recent, rapid advances in artificial intelligence (AI) hold promise for the development of such a coding service.

Author Note:

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The Essence of Love: An Exploratory Bibliometric Analysis of the Psychological Literature

Chris Piotrowski

The construct *Love* has been the subject matter of voluminous popular literature and has attracted extensive scholarly attention for many decades. Yet, there is a dearth of studies that examine the scope and breadth of the intellectual structure of modern scholarship on this ubiquitous topic. The current study reports on a bibliometric content analysis of 1,562 peer-reviewed articles indexed in the field of psychology from 2012-2021. The most prominent investigatory topics identified, in rank order, were: Theory/Models, Brand love (marketing), Cultural factors, LBGTQ, Measures/Scales, Religion/Spirituality, Neurophysiology, Therapeutic issues, Mother love, Love styles, and Social media. Interestingly, several topical areas received scant investigatory attention (less than 1% of dataset), i.e., infidelity, divorce, falling-in love, sibling love, love of pets, suicide, loneliness, and cognitive styles. These findings a) offer a panorama on the state of contemporary scholarship regarding the subject matter of love, b) present a framework as a basis for the study of evolving research trends, and c) provide a tapestry in conceptually describing the essence of love.

Introduction:

Love is ubiquitous, and thus, not surprisingly, a prominent area of research across a myriad of academic disciplines over many decades (Quintard et al., 2021; Sternberg & Barnes, 1988). To validate this contention, one needs to only conduct a quick *Keyword* search of the scientific literature. For example, the research output for the term 'Love' in the database *PsycINFO* is quite revealing over 10,000 peer-reviewed articles, 1,295 books/book chapters, 873 dissertations where love is a main topic of study. This body of scholarship spans a vast myriad of topics from neurobiological brain substrates (Song et al., 2015) to eye-tracking studies (Bolmont et al., 2014), from love 'styles' (Gana et al., 2013; Marzec & Lukasik, 2017) to love addiction (Fisher et al., 2016), from 'Brand' love of products (Zarantonello et al., 2016) to falling in love (Torras-Gomez et al., 2020), love addiction (Sanches & John, 2019) to intimacy with robots (Doring & Poeschl, 2019), from love of music (Conrad et al., 2019) to love of research (Sternberg, 2018). In its essence, 'Love' is a powerful emotion which encompasses sentiment, attitude, and cognition which can be expressed toward humans, animals, ideas, material objects, environment, social structures.....or just about anything.

Yet, few studies report on an empirical examination regarding the scope and breadth of research on this rather common construct. In this regard, a search of the social science literature finds no bibliometric investigations on the topic, although several studies on research trends analysis on various human emotions have appeared (see Piotrowski, 2023 for discussion). In order to address this void in the literature, the current paper reports on a bibliometric content analysis of the contemporary psychological literature, specific to the construct *Love*.

Method:

Within the scope of bibliometric research designs, content analysis is a well-recognized approach in investigating and identifying the structure of research output regarding select topical subject matter (Krippendorff, 2004). Indeed, over the past 2 decades this methodology has been applied across various sub-disciplines in the social and behavioral sciences (see Lin et al., 2010; Piotrowski, 2021, 2013, 2012). In order to obtain an inclusive, but specific overview of the extant literature on the topic under study, the search in the database *PsycINFO* specified that the term 'Love' appear in the *Title* of the reference. And to

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garner a contemporary perspective of the literature, research output was limited to research published over the past decade (2012-2021). Based on these parameters, the total number of references identified was 1,781. Of these, 219 were book reviews, erratum/corrections, comment/replies, editorials, which were deleted as potential reference sources. Hence, the total dataset for the current analysis was 1,562 peer-reviewed articles. Based on a review of each individual study, the author tagged the reference with a sole topical descriptor that best represented the main focus of each article. A frequency tally, across individual subject categories, was maintained and then summed for each topical descriptor.

Findings and Discussion:

Table 1 presents the rank-order of investigatory topical areas, based on the procedure noted above. As the topic of love is viewed from a wide spectrum of theoretical perspectives, it is apparent that researchers approach research designs based on copious theories and conceptual models (Bear & Rand, 2019; Foster et al., 2019; Thorne et al., 2019). However, based on the current analysis, it is apparent that the majority of these studies on love are based on psychoanalytic perspectives (e.g., Anderson, 2014; Bergmann, 1988; De Vleminck, 2018; Fink, 2015). This focus on theory/models is probably attributed to the general lack of consensus regarding construct issues, typology, and taxonomy encompassing the basic definition of love (Gawda, 2019; Karandashev & Clapp, 2015; Litinetskaia & Guelfi, 2021; Murstein, 1988; Skold & Roald, 2020; Watts & Stenner, 2014).

Somewhat surprising, there appears to be extensive research attention devoted to the study of 'Brand love', in reference to marketing and consumer decision-making (e.g., Batra, 2012; Schmid & Huber, 2019). Perhaps this reflects emergent consumerism in recent decades and the central importance of marketing in the modern business milieu. The analysis found diverse research interest on the cultural and cross-national impact of love and collective nature of love in human populations (Jin et al., 2015; Nelson & Yon, 2019; Vera Cruz, 2019). Many of these studies dealt with the issue of love in the African-American community (e.g., Patihis et al., 2019).

A sizable body of research has a focus on LBGTQ aspects of love, mother love, and religious or spiritual factors (see Table 1). Perhaps reflecting the lack of consensus on the nature, composition, and/or dimensions of love, there has been active, emergent research endeavors on the development of a myriad of measures or scales assessing the construct of love (see Aghedu et al., 2019; Costa et al., 2021; Hatfield et al., 2012; Kapusta et al., 2018; Merino & Privado, 2020; Sorokowski et al., 2021; Trent et al., 2020). Noteworthy, many of these measures tap on love 'styles', which is an area of keen investigatory interest (Dunlop et al., 2020; Odilavadze et al., 2019). Love styles encompass how individuals view the issue of love in romantic attachments and relationships (see Vedes et al., 2016). Furthermore, researchers continue to investigate personality factors in the context of romantic relationships (Mandal & Latusek, 2018; Oravecz et al., 2020; Safdar & Dasti, 2015). One central dimension is the expression of compassionate love (Fehr et al., 2014) versus being egotistical, i.e., self-love (see Campbell et al., 2002; He & Zhu, 2016; Henschke & Sedlmeier, 2021). In addition, there is emergent research on pathological states, such as personality disorders, and expression of love (Trzebinska et al., 2015). In this context, it is surprising that there is rather limited research on intimate partner violence in the study of love relationships (Smith et al., 2013).

There are 2 clinical areas that have a particular focus on the implications of love in human relationships. First, neurophysiologists have conducted pioneering research on how 'being in love' alters brain functions and neurotransmitter activity (Acevedo et al., 2012; Schweizer et al., 2013; Takahashi et al., 2015; Wang et al., 2020). Moreover, this line of research has found supporting evidence that love 'states' have similar neuro-circuitry to a variety of addictive conditions (see Gu et al., 2019; Tatkin, 2012). Hence, the common reference to *love addiction* in the literature (Earp et al., 2017; Sanches & John, 2019; Sussman, 2010). Second, a sizeable number of studies in the current analysis focused on the importance of love in the

lives of patients in therapy (e.g., Anderson, 2014), as well as the issue of love in the context of the transference phenomenon encountered during psychotherapy (Fink, 2015).

Perhaps reflecting the contemporary milieu involving emerging technologies, this analysis confirms the central role of various social media platforms in romantic relationships (Asselmann & Specht, 2020; Dillman - Carpentier et al., 2014; Hobbs et al., 2017; Klein, 2013; Orosz et al., 2015). Of particular interest, this analysis confirms that 'love of money' continues to attract serious research attention (Wang & Krumhuber, 2017).

Table 1. Rank Order of Predominant Investigatory Topics in Research on Love

Major Topic	***n of Articles***	***%***
Theory/Model	96	6
Marketing/Brand love	73	5
Cultural issues	65	4
LBGTQ	47	3
Measures/Scales	44	3
Religion/Spirituality	42	2.5
Brain/Neurophysiology	38	2.5
In Therapy	34	2
Mother Love	33	2
Love Styles	31	2
Social Media	30	2
Race	25	1.5
Personality/5 Factor	23	1.5
Love of employment	22	1.5
Construct/Typology	21	1.5
Language/Discourse	20	1.5
Love of Money	19	1
Marriage (in general)	18	1
In Adolescence	18	1
HIV-AIDS	18	1
Self-Love	17	1
In Movies/TV shows	16	1
Love-Hate issues	15	1
Compassionate love	15	1
Attachment/Security	15	1
Historical issues	15	1
Therapist-patient relationship	14	1
In the general Literature	14	1
Partner abuse/violence	13	1
In Elderly	12	1
Love letters	12	1

Note. Topics with more than 1% of articles in the total dataset (n=1,562).

Neglected Areas of Research:

The following subjects represented just under 1% of the current dataset: Infidelity, love addiction, work-family balance, love during COVID-19, the disabled, falling-in-love, love of food, erotica, drug

abuse, educational programs, love of nature, love of life (e.g., Cruces et al., 2015; Earp et al., 2017; Tatkin, 2012). Furthermore, this analysis identified a host of topics that have not been main areas of research focus over the past decade (well below 1% of the dataset of articles). Table 2 lists these investigatory areas.

Table 2. Neglected Areas of Research Focus in Recent Years (2012-2021) Related to the Topic of Love

Father love	Sibling love	Workplace love
Love of pets	Divorce	Trust issues
Emotion regulation	Well-being	Foster parents
Suicide	Unrequited love	Love at first sight
Dreaming	Loneliness	Grief
Grandparents	Creativity	In military life
Eating disorders	'Tough' love	Cognitive style

Conclusion:

The findings of this bibliometric study provide an exploratory overview on the state of contemporary scholarship regarding the topic of love. While the breadth of investigatory focus spans diverse domains, the analysis identified a rather extensive list of topical areas which receive sparse research attention. Perhaps this latter finding, to some extent, reflects bibliographic indexing functions (e.g., keyword selection), or may indicate that these 'sparsely' research areas tend to be secondary or tertiary variables under study. Overall, these findings provide a descriptive template regarding recent scholarship on the subject matter of love and a basis for the study of evolving research patterns and investigatory trends. Finally, this study offers a conceptual basis for understanding the essence of love.

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The Influence of Language on Thematic Apperception Test Assessment of Defenses in Spanish-speaking College Students

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Cultural influences, including the use of language, have been shown to affect personality development and are therefore also likely to impact personality assessment results (Ramirez-Esparza et al., 2006). The influence of language is particularly relevant in story-telling measures such as the Thematic Apperception Test (TAT; Morgan & Murray, 1935). The purpose of the current study was to analyze TAT narratives delivered in Spanish and English to assess the application of defense mechanisms based on the Defense Mechanism Manual (DMM; Cramer, 1991) among Hispanic international students in the United States. The sample comprised 21 bilingual Hispanic participants who provided TAT stories in either Spanish or English. Results demonstrated that defense mechanism scores were significantly dependent on the language used ($F(3,17) = 5.122$, $p < .05$; Pillai's Trace = .475). Specifically, univariate analyses demonstrated a significantly higher mean score for Denial ($F(1,19) = 8.29$, $p = .01$; English $M = 8.82$, $SD = 4.64$; Spanish $M = 3.90$, $SD = 2.89$) and Projection ($F(1,19) = 4.63$, $p < .05$; English $M = 13.55$, $SD = 5.43$; Spanish $M = 8.00$, $SD = 6.38$) for TAT stories narrated in English. To contextualize the aforementioned results, the frequency of distress-related words (stress, emotional distress, conflict, fear, and guilt) from Spanish and English narratives were compiled. A chi-square test of homogeneity showed a significant overall association between narrative language and distress-related words ($p < .001$). Words classified in the emotional distress category in English narratives (60.2%) were significantly higher in frequency than those in Spanish narratives (46.0%), whereas words in the conflict and fear categories in Spanish narratives (32.3% and 8.9%, respectively) were significantly higher in frequency than those in English narratives (21.3% and 4.6%, respectively). These findings offer guidance for psychological assessors to make informed decisions on the selection of language for eliciting TAT narratives from Hispanic individuals.

Introduction:

The United States is one of the top destinations for international students from Central American countries such as Guatemala, Honduras, El Salvador, Costa Rica, and Nicaragua. For the 2021-2022 academic year, the number of international students in the United States from Central America and Mexico totaled 23,525, representing a 10.8% increase from the previous year (Open Doors Data, 2023). These young individuals arrive in the U.S. for higher education based on factors such as geographic proximity, availability of a wide range of high-quality educational institutions, safe and diverse living environments, and availability of programs to learn or improve English skills. With Hispanic students making up a large portion of international students in the U.S., there is a clear need to elucidate how they conceptualize their transitions to a new country and how these understandings affect their appraisal of themselves and others. Personality measures such as the Thematic Apperception Test (TAT; Morgan and Murray, 1935) are useful tools in assessing an individual's underlying perceptions of personality, motives, needs for achievement, problem-solving abilities, and view of interpersonal relationships. Therefore, measures such as the TAT can aid in analyzing Hispanic international students' perceptions, self-attitudes, and interpersonal dynamics. The TAT is also a useful medium through which culture can be expressed (Dana, 2005; Ephraim, 2000). In light of psychological research studies demonstrating the relationship between language, culture, and personality, the language used in providing TAT narratives needs further examination, especially to determine if there are differences among stories told in the native language versus the acquired language, which has relevance for test results interpretation.

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Keywords*:* Hispanic, Bilingual, Thematic Apperception Test, Defense Mechanism Manual, Defenses

Language and Personality

The idea that language reflects personality has long been familiar, as it is a medium through which personality development becomes manifested. Several prominent theories in psychology explain that culture influences an individual's cognition through the particular language used. Whorf (1956) explained that linguistic patterns in different languages could potentially impact a person's habitual thinking; thus, the language people speak can affect how they perceive and remember their world. Other studies have delved into the impact of both culture and language on cognition. For example, Ji et al. (2004) examined whether culture and language affect reasoning, using bilingual participants and testing them in their proficient languages. These authors found that culture had a significant effect, independent of language, on how people grouped sets of words. Specifically, Chinese participants grouped words primarily based on their relationships (thematic categorization), whereas European Americans grouped words based on category (taxonomic categorization). More recently, Jenkins (2017) reiterated the strong influence of culture on storytelling and called attention to the affinity of clinical storytelling assessments, such as the TAT, to the analysis of narratives in fields of linguistics, speech and hearing sciences, and communication studies.

Storytelling Instruments-The Thematic Apperception Test

Storytelling serves as a mechanism in constructing meaning in an individual's life. Therefore, psychology has applied this method in examining how individuals represent themselves and their experiences (Cramer, 1996). Each story can be considered a person's explanation of his or her psychological reality (Cramer, 1996). The TAT (Morgan & Murray, 1935) provides a glimpse of an individual's unconscious reality through such narratives. In developing this measure, Morgan and Murray (1935) hypothesized that the content of a person's imagined stories would provide context to the underlying dynamics of that person's interpersonal relationships and self-attitudes. The TAT is the best-known storytelling technique used in personality assessment (Krishnamurthy, Brabender, et al., 2022), and it is popularly used and relied upon in academic training and internship settings (Piotrowski, 2017).

The instructions for the TAT consist of asking the test taker to tell a complete story in response to the picture cards. The storyteller is asked to include what is happening in the beginning, middle, and end of the story, including what the people pictured might be thinking and feeling. The narrated stories are recorded verbatim by the examiner.

Over the decades, multiple interpretive systems have been developed to analyze TAT stories, with the first system being proposed by Murray in 1943 to assess the interplay of needs and presses (Murray, 1943). These approaches were largely methods to categorize the information narrated on the TAT for qualitative interpretation; with a few exceptions, these procedures typically did not involve formal scoring. In recent years, two major scoring methods have been developed for the systematic scoring of TAT narratives – the Social Cognition and Object Relations Scale (SCORS; Westen et al., 1990), and the Defense Mechanism Manual (DMM; Cramer, 1991), both of which have received considerable research attention and psychometric support. The Defense Mechanism Manual (DMM; Cramer, 1991), which is the focus of the current study, was developed to assess the defenses of denial, projection, and identification as revealed in TAT stories. Denial is a defense mechanism that occurs when an individual refuses to accept reality or facts. According to Cramer (1999), denial is the most primitive of the three defenses. The second defense, projection, is defined as when an individual attributes his or her impulses or negative qualities to someone or something else. Cramer (1991) identified this defense mechanism as somewhat more complex and more mature than denial. Identification involves adopting the behavior of a person who is more powerful than, and hostile towards, oneself. This mechanism is considered the more complex and mature of the three defenses. These three defenses are coded according to a scoring manual with the use of a standard set of criteria. Each TAT story is rated for each defense.

Thematic Apperception Test with Ethnic/Cultural Groups

Lonner (1985) noted that since some degree of storytelling is common in all cultures, the TAT and its extensions have been helpful in the study of diverse cultural groups. Ching et al. (1995) demonstrated that the TAT evokes different narratives in people from different cultures. The results of their study indicated themes of family interaction patterns and family role perceptions that persisted across multiple measurements over time among families from the Japanese American community. In other words, themes such as hierarchical status, gender norms, role differentiation, and harmony were salient in the narratives of Japanese American families. Compared to their European counterparts, Japanese American families had prominent themes of interpersonal acceptance and cooperation.

Suarez-Orozco and Todorova (2006) conducted a study to examine Mexican children's narratives elicited by their modified version of the TAT. Results from this study show that the most salient themes in the participants' stories were those of individuation, separation, self-doubt, and concerns with one's identity and abilities. These themes were prominent in late adolescence. However, immigrant background, rather than age, proved to be the most important to the narratives. Second-generation Mexicans expressed greater themes of isolation, inadequacy, and disengagement in their narratives compared with recently arrived immigrants.

A study by Todorova et al. (2008) analyzed different patterns regarding the interplay of achievement and affinitive themes in TAT narratives, reflecting the process of adaptation of recently arrived immigrant children from a variety of backgrounds. Their findings demonstrated that the TAT was a beneficial narrative tool that mirrored these children's concerns, emotions, and social relations. Chinese children portrayed relationships mostly related to the community, whereas Latino children portrayed the most important relationships to be those within the family. Haitian children told stories that were the least empowered, with less favorable resolutions, fewer sources of support, and almost no changes with time.

A particularly useful method of examining linguistic/cultural effects on TAT narratives is through the comparison of narratives provided by bilingual samples in two different languages. In a rare, published study of this kind, Ervin (1964) analyzed the impact of spoken language as a reflection of culture in TAT stories, using a sample of 64 French-English bilingual individuals. Her findings suggested that these individuals tended to shift their expressed content depending on the language used**.** Specifically, more achievement themes were expressed in English by women participants, and more aggression, autonomy/withdrawal themes were expressed in French narratives. More recently, Katsavdakis et al. (2001) analyzed narratives obtained from four psychiatric patients in both their Middle Eastern mother language and their acquired language and scored on the five object relations scales of the SCORS, Q Sort (SCORS-Q). Using illustrations from the most vivid and complex protocol in the set, their findings demonstrated differences in imagery, developmental sequence of the stories, and narrative detail between stories delivered in the participant's native and acquired languages. Specifically, Katsavdakis et al. (2001) noted differences in sense of self, self-in-relation-to-other, and pathology level, with the presence of more primitive material and core conflicts expressed in the mother tongue.

Purpose of the Present Study

In the present study, we compared TAT-based defense mechanism scores derived from narratives generated in Spanish and English. Specifically, this study assessed the expression of three defenses – Denial, Projection, and Identification – using Cramer's (1991) DMM. Building on Ervin's (1964) and Katsavdakis et al.'s (2001) reports, we anticipated differences in DMM scores from stories narrated in participants' native language versus acquired language.

We undertook this comparison in a sample of Hispanic international students whose primary language is Spanish and whose college education is in English. To contextualize the findings related to this

hypothesis, we conducted a qualitative and quantitative examination of the TAT narratives to identify the nature and frequency of words relating to stress, emotional distress, conflict, fear, and guilt obtained from each narrative language group.

Method:

Sample

Participants consisted of *N* = 21 bilingual Hispanic college students (*n* = 10 for Spanish narratives, *n* = 11 for English narratives) attending a Southeastern university in the United States. Their countries of origin were Central American and adjacent South American nations of Venezuela, Colombia, Ecuador, Costa Rica, El Salvador, Honduras, Mexico, Nicaragua, and Panama. Participants were 18 years of age or older. The total sample's mean age was 22.95 (*SD* = 3.14; *M* age for Spanish-narrative sample = 22.50, *SD* = 2.92; *M* age for English-narrative sample = 23.36, *SD* = 3.41). The overall sample was gender-inclusive: *n* = 10 (47.6%) men, *n* = 10 (47.6%) women, *n* = 1 (4.8%) other. Participants had diverse major areas of study, ranging from Accounting/Business, Aeronautics, Biology/Marine Biology, and Engineering to Oceanography and Psychology. Table 1 demonstrates further details of the sample's demographic features.

Table 1.

Sample demographics				
Demographic variable	**Spanish narrative (*N* = 10)**		**English narrative (*N* = 11)**	
	n	**Percent**	***n***	**Percent**
Gender				
Female	5	50.0%	5	45.5%
Male	4	40.0%	6	54.5%
Other	1	10.0%	0	0.0%
Age				
18	0	0.0%	1	9.1%
19	1	10.0%	1	9.1%
20	2	20.0%	1	9.1%
21	1	10.0%	0	0.0%
22	2	20.0%	1	9.1%
23	0	00.0%	2	18.2%
24	3	30.0%	0	0.0%
25	0	0.0%	1	9.1%
26	0	0.0%	3	27.3%
29	1	10.0%	1	9.1%
Country of origin				
Venezuela	1	10.0%	0	0%
Colombia	3	30.0%	0	0%
Ecuador	0	0%	2	18.2%
Costa Rica	0	0%	1	9.1%
El Salvador	1	10.0%	0	0%
Honduras	0	0%	2	18.2%
Mexico	4	40.0%	1	9.1%
Nicaragua	1	10.0%	1	8.3%
Panama	0	0%	4	36.4%
Education level				

Incoming Freshman	3	30.0%	2	18.2%
Freshman	2	20.0%	4	36.4%
Sophomore	3	30.0%	0	0%
Junior	1	10.0%	0	0%
Senior	1	10.0%	5	45.5%

Instruments

The TAT was the measure of focus in this research. The TAT consists of 31 semi-ambiguous cards, most portraying one or more individuals in the pictures. The complete set consists of 31 stimulus drawings, although only 10-12 cards are typically used per person. We used the Defense Mechanism Manual (DMM) as the scoring measure in this study. The DMM was developed to assess the defense mechanisms of denial, identification, and projection. Twelve TAT cards – Cards 1, 3BM, 3GF, 6BM, 6GF, 8BM, 8GF, 10, 13MF, 14, 15, and 18GF – were used in the current study from the set of 22 cards for which scoring criteria have been developed in the DMM. The scoring for each defense is based on seven categories, each designed to indicate a different aspect of the defense. No scores are given to stories that do not use a defense; however, a single category in one story can be coded more than once. These scores are ultimately summed to produce a total raw score for each of the three defenses. Evidence for interrater reliability of DMM scores is provided by Hibbard and Porcerelli (1998) who reported *r*s of .74, .86, and .74 for Denial, Projection, and Identification, respectively, by Meyer (2004) who reported an overall r =.80 from meta-analytic results, and by Porcerelli et al. (2010) who reported fair-to-excellent interrater reliability coefficients. Porcerelli et al. (2010) also provided evidence supporting the convergent validity of DMM scores with the Defensive Functioning Scale (DFS) of the *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed. (American Psychiatric Association, 1994). Specifically, Denial was inversely related to a measure of defense maturity in the DFS – Overall Defensive Functioning (ODF; r = -.28), and it also had a significant positive correlation with a DFS composite measure of pathological defenses (r = .36). DMM Projection correlated inversely with ODF (r = -.22) and positively with the DFS Pathological Composite score (r = .32) and Minor and Major Image-Distorting Level defense scores (r = .48).

Procedure

The study commenced after obtaining the approval of the university's Institutional Review Board and securing written informed consent from each participant. Participants were given the usual TAT instructions to make up a story involving the characters in the image and to include four elements in such a story: what is happening in the image, what events led up to it, what the people in the story are feeling and thinking, and what the outcome will be. Half of the participants were instructed to respond to the TAT in their native language of Spanish (n = 10), while the other half were told to respond in English (n = 11). Participants were provided the opportunity to enter a lottery to win a $50 gift card. Three participants from each group (Spanish and English) were selected randomly for a total of six gift cards, which were given to them after the completion of data collection.

After the TAT responses were scored with the DMM by the first author, a second rater was used to determine interrater reliability. The second rater, who was a bilingual graduate student proficient in English and Spanish, scored the defense mechanisms from six TAT stories, three from the English narratives and three from Spanish.

Data Analyses

Preliminary analyses consisted of computing descriptive statistics, including means, standard deviations, and percentage data to describe the characteristics of the sample. Additionally, descriptive statistics of DMM scores were generated. Interrater reliability for DMM scores was evaluated through

intraclass correlation coefficients (ICCs). Primary analyses consisted of a multivariate analysis of variance (MANOVA) to evaluate the overall difference in DMM scores derived from English and Spanish language narratives, followed by one-way analyses of variance (ANOVA) tests to determine whether there are statistically significant differences between the means of each DMM defense (i.e., Denial, Projection, and Identification).

Qualitative and quantitative analysis of TAT narratives consisted of identifying keywords related to stress, emotional distress, conflict, fear, and guilt, which were categorized and counted separately for each group. Synonyms of each word were analyzed, and the semantic equivalent was obtained in Spanish. Chi-square analyses were conducted to determine significant differences in their frequencies.

Results:

Among the preliminary analyses, means and standard deviations for DMM defense category scores were obtained from the Spanish and English narratives and are shown in Table 2.

Table 2.

Means and standard deviations of DMM scores for the sample				
Defense category	**Spanish narrative (*N* = 10)**		**English narrative (*N* = 11)**	
	M	*SD*	*M*	*SD*
Denial	3.90	2.89	8.82	4.81
Projection	8.00	6.38	13.55	5.43
Identification	7.80	2.78	10.00	3.16

Interrater reliabilities for the three defense mechanisms using the ICC model were .91 for Denial, .72 for Projection, and .94 for Identification. Each of these coefficients falls in the range considered moderate-to-excellent reliability (>.74; Shrout & Fleiss, 1979).

A one-way MANOVA was conducted to determine the overall difference in DMM scores of Denial, Projection, and Identification derived from TAT narratives provided in Spanish and English. Preliminary assumption checking revealed that defense mechanisms scores were normally distributed for Projection and Identification but not for Denial, as assessed by the Shapiro-Wilk test. There were no univariate or multivariate outliers for the dependent variables (i.e., defense mechanism scores) as assessed by box plot and Mahalanobis distance, respectively ($p > .001$). Linear relationships were found for Projection and Identification as assessed by scatter plot, and there was homogeneity of variance-covariance matrices for the three defenses, as assessed by Box's M test ($p = .734$). The MANOVA result was statistically significant, $F(3, 17) = 5.122$, $p = .010$; Pillai's Trace = .475; partial $\eta 2 = .475$. ANOVA results showed significant differences between mean DMM scores obtained from Spanish and English narratives for Denial, ($F(1, 19) = 8.286$, $p = .010$; partial $\eta 2 = .304$) and Projection, ($F(1, 19) = 4.632$, $p < .05$; partial $\eta 2 = .196$) but not for Identification. Results are shown in Table 3. It is noted that Levene's test for equality of variances revealed the assumption of homogeneity of variance between groups was not met for Denial.

Table 3.

ANOVA results for DMM scores obtained from Spanish and English narratives							
Defense category	**Spanish narrative**		**English narrative**		***F*(1, 19)**	***p***	**η^2**
	M	***SD***	***M***	***SD***			
Denial	3.90	2.89	8.82	4.64	8.29	.010	.304
Projection	8.00	6.38	13.55	5.43	4.63	.044	.196
Identification	7.80	2.78	10.00	3.16	2.84	.108	.130

A count of keywords derived from TAT stories delivered in each language was undertaken to contextualize the results, as distress and difficulty underlie the use of defense mechanisms. Five hundred and fifty-nine distress-related words extracted from the Spanish and English narratives were assigned to stress, emotional distress, conflict, fear, and guilt classifications. Table 4 illustrates the overall distress-related word frequencies by TAT card, and Table 5 illustrates the nature of words across these categories.

Table 4.

Frequency of distress-related words in Spanish and English narratives				
Card #	**Spanish narrative**		**English narrative**	
	n	**%**	***n***	**%**
Card 1	23/235	10%	34/324	10%
Card 3BM	28/235	12%	41/324	13%
Card 3GF	30/235	13%	46/324	14%
Card 6BM	27/235	11%	28/324	9%
Card 6GF	26/235	11%	26/324	8%
Card 8BM	15/235	6%	25/324	8%
Card 8GF	8/235	3%	13/324	4%
Card 10	10/235	4%	6/324	2%
Card 13MF	17/235	7%	30/324	9%
Card 14	15/235	6%	14/324	4%
Card 15	13/235	6%	25/324	8%
Card 18GF	23/235	10%	36/324	11%

Table 5.

Frequency of Words for Stress, Emotional Distress, Conflict, Guilt, and Fear in English and Spanish		
Distress-related words	**English narratives (*N* = 11)**	**Spanish narratives (*N* = 10)**
Stress	very rough time; economic problems (x2); sacrifice (x3); tired (x13); exhausted (x2); frustrated (x3); tiredness; fired; stressed; condolences; impotent; uncertainty; frustration.	cansado; frustracion; situacioneconomica; estresado; presionado; frustrado; estresado; estresada (x2); apresura; frustracion (x3); saturado.

Table 5 cont.

Distress-related words	English narratives (*N* = 11)	Spanish narratives(*N* = 10)
Emotional Distress	sad (x2); sadness (x3); desperation; regret (x3), not happy; depression; anger (x3); grief; anxiety; grief (3x); drained; crying (x3); sad (x11); pain (x2); distress (x3); devastating; dreadful; overwhelmed (x2); sad (x5); depressed (x3); devastated; pain; crying (x2); hurt (x3); sad (x6); crying (x3); kill herself; devastated; jealous; hurt; overwhelmed; trauma; stuck (x2); upset (x3); desperate; cry (x3); miserable; distress; causing a mess; world expects of her; death; suffering; cry; hurt (x3); sad; break down; nervously; nervous; sad (x4); upset (x6); devastated; crying; anguish; she feels betrayed; hurt; anger (x5); mad; trauma; flashbacks (x3); restless; sad (x6); crying (x3); upset (x2); furious; devastated; pain (x2); destroyed; grieve; nervous; emotionally drained; sadness (x4); desperate; upset (x3); distraught; distress; sad (x5); depressed; hurt (x2); loss; panicked; dread; worried; sad (x4); crying; angry; destroyed; worried; anxiety.	traumatizado; preocupados (x2); ansioso; sufre; decepcionado; abrumado; preocupado (x2); preocupado (x3); decepcionado; preocupada (x2); no estamuyfeliz; decepcionada; nerviosa; no se quieremorir; overwhelmed; decepcionar; triste (x13); llorando (x3); dolor (x2); angustia; agonia (x2); enojo (x2); desespero; nuncanseranfelices; miserable; angustiada (x4); triste (x2); llorando (x2); deprimida; enfurecido; enojado; miserable; sufrimiento; llorando (x2); triste (x5); desconsolada; desesperada (x2); desesperadamente; triste (x9); devastada (x2); destrosada; llorando (x3); triste (x3); enojada (x3); agonia; desesperada (x2); dolor (x2); triste (x2); sufrio; enojado; rabioso; triste (x3); llorar (x2); tristeza; depresion; triste (x3); angustiado (x2); rabia (x2); llorando; llorando; triste; tristeza (x7); enojo; agonizada.
Conflict	forced (3x); fight (x2); domestic abuse; war (5x); challenge; cheating; conflicted; invasion; attack; breakup; small fight;misunderstanding (x2); war; forced (x2); rebel; broke-up (x3); arguing; fight; unfaithful; cheater; killed her (x3); lash out; affair; breaking-up; torture; forced (x3); battle; enemy; killed her; end her life; fighting; took her life; pushed; beat; leave this man; he killed; nagging; stole; arrested; torturing; killed; not interested; prisoner; war; forced; broke-up; war (x2); wounded-in-battle; war (x2); crossed some boundaries; fight (x2).	mato a sumujer (x2); engañando; golpeo; perverso; enfrentarla; desmembraban; losmato (x2); guerra (x5); trampa;castigo; pelea (x3); robe; matar (x4); asesino (x2); enganando; cuerno; escaparse; captiva; exigiendo;guerra; inapropiado; rechazar; abuso; ahorcando; traiciono, asesinarla; enfrentarlo; burla; robada; robaron; matando; escapar (x5); abusan (x2); guerra; sacara de la casa; matara (x2); golpes; matado; matarla; asesino, matando; bien duro con ella; robaron (x2); cuernos; infidelidad; terminara; mate; incomoda (x2); regano; molestar; matar; pelea; enfrentar; no estadeacuerdo (x2); tension; entrometerse; molesto; engañar; no puedecomplacer.
Fear	scared; avoid; shocked; scared (x2); repulsion; shocked (x2); shock (x2); scared; surprise; shock (x2); scared.	miedo (x2); shock; asustada; miedo; miedo (x2); soprendida (x2); impactada (x2); sorprendida; asustada; sorprendida (x3); miedo (x2); terror; sorprendido; miedo; terror; asustada.

Guilt	remorseful (x2); guilt; guilt (x2); guilt (x4); guilt; guilty.	culpable; vergüenza (x2); culpa (x3); pena; cobarde (x3); apenado; remordimiento; vergüenza; pena; culpable.

A Chi-square analysis of homogeneity indicated a significant overall association between the language used by participants and distress-related words ($p < .001$). Post hoc analysis involving pairwise comparison using the *z*-test of two proportions with a Bonferroni correction showed significant results for emotional distress, conflict, and fear categories. Specifically, words classified in the emotional distress category in English narratives (60.2%) were significantly higher in frequency than those in Spanish narratives (46.0%). On the other hand, words in the conflict and fear categories in Spanish narratives (32.3% and 8.9%, respectively) were significantly higher in frequency than those in English narratives (21.3% and 4.6%, respectively). The proportions of words classified in the stress and guilt categories for English and Spanish narratives were not significantly different.

Discussion:

Personality measures are essential tools in assessing individuals' motives, appraisals of their environment, and interpersonal relationships. Performance-based personality techniques elicit verbal responses to visual images as a means to assess personality dynamics. Krishnamurthy, Brabender, et al. (2022) recently noted that although performance-based tests place less of a demand on language comprehension than self-report measures, language is still relevant based on its use in responding to test stimuli. Thus, vocalized language mediates self-expression when using these techniques. The role of language is particularly important in narrative techniques such as the TAT, in which storytelling is the vehicle for self-representation (Cramer, 1996).

The central focus of the current study concerned the differences in DMM scores between TAT stories delivered in Spanish and in English. Previous research has shown how native language may elicit different themes in the TAT than those produced in the second language (Ervin, 1964; Katsavdakis, 2001). MANOVA results showed a significant overall effect of language on DMM mean scores. Univariate analyses demonstrated higher DMM mean scores for stories narrated in English than in Spanish for the defenses of Denial (generally considered a primitive defense) and Projection (considered to be a more mature defense than denial). Interestingly, DMM mean scores for Identification, which is viewed as the most mature of the three defenses, were not significantly different across narrative language. The direction of these results is contrary to those of Ervin (1964), based on a community sample, and Katsavdakis et al. (2001), based on a psychiatric sample, both of whom found more primitive phenomena expressed in French and in Middle Eastern dialects, respectively, relative to English. Aside from sample differences, our study also differed from theirs in the number of TAT cards used (12 vs. 9 and 11, respectively), scoring method, and choice of native language. Nonetheless, our results broadly concur with their findings in affirming the importance of language in TAT storytelling.

There are two possible explanations for the findings of higher Denial and Projection scores obtained from English language than Spanish language narratives in our study. First, these results may be in part due to these students being in an English-speaking culture and an educational institution in which the language of instruction is English. Therefore, these individuals may be more articulate in English, at least in comparison to a typical Hispanic individual who has not been exposed to the education system in the United States. These scores may be descriptive of Hispanic students' immersion in the English language and its effects on TAT defense mechanism scores. A second, more intriguing possibility is that bilingual Hispanic individuals perceive their external reality and internal states differently when speaking in the acquired language than in their native language. Specifically, the significantly higher use of denial in the acquired language can signify the need for these individuals to "change reality into something it is not, or to disconfirm the existence of something that is" (Cramer, 1996, p. 87). Similarly, when using projection in

the acquired language, Hispanic individuals may be adding or attributing "some quality or motivation to objects or persons that they do not, in reality, possess" (Cramer, 1996, p. 87). Considering the many theories on the use and need of defense mechanisms, the results of this study appear to demonstrate how Hispanic students, who speak in their acquired language, apply defense mechanisms to mediate internal conflicts or anxieties. Previous research has also suggested that bilingual individuals tend to adjust their behaviors to parallel the overarching linguistic social context (e.g., Chen & Bond, 2010; Ramirez-Esparza et al., 2006). Our findings seem to offer support for this proposition in terms of participants adjusting their cognitions through defense mechanisms to fit with the prominent culture when employing the language of that culture.

To further explore the above-mentioned results, qualitative data were extracted and analyzed by counting the frequencies of certain keywords. Words related to stress, emotional distress, conflict, fear, and guilt were examined and counted, as psychological difficulty and distress constitute the bases for employing defense mechanisms. Results of chi-square analyses showed that English language words related to emotional distress had a higher frequency than similar words found in the Spanish narratives. On the other hand, conflict and fear words in the Spanish narratives had a higher frequency than words in the same categorization in the English narratives. A possible explanation for these results could be that there are more words for emotional distress in English than in Spanish. Similarly, there may be more varied words for conflict and fear in the Spanish language. A greater variety of words in either language would allow respondents to choose alternative or synonymous words to define emotions in their narratives. For example, among English narratives, a common theme regarding emotional distress was "loss" or the loss of someone/something. Participants used diverse words to describe similar emotions related to loss, such as "grieve," "distraught," "pain," "distress," and/or "devastated," among many others. Such a variety of words to describe emotional distress was not observed in the Spanish language, as participants were prone to be more economical in their choice of words. In the reverse direction, a similar trend was observed in the Spanish narratives for words related to fear and conflict. Participants were inclined to use various words such as "asustada," "terror," "miedo," and "impactada" to describe the single emotion of fear in Spanish compared to "scared" in English. Likewise, different Spanish words such as "engañado," "perverso," and "golpeó" were used to express conflict between characters relative to a more limited range in English.

These qualitative results may also reflect Ervin's (1964) proposition that language influences the classification of stimuli and that we recall experiences through classification. Thus, bilingual individuals may be classifying stimuli depending on the language being used. In other words, the use of distress words may be congruent with how these individuals have classified previous experiences depending on the linguistic context in which these emotions were felt. If we extrapolate from this notion, bilingual Hispanic students who have felt emotional distress may have classified such emotions in the language of the culture in which they experienced it (i.e., English). Similarly, bilingual Hispanic students who have experienced fear and conflict may retrieve comparable emotions depending on the language they were using at the time (i.e., Spanish). These results also align with the sociocultural backgrounds and history of this population at large, where conflict within the native nations is prevalent, and fear is commonplace. Additionally, the migration process to a new country can create many distressing emotions for this population of young adults seeking higher education. Ervin (1964) described this occurrence as a language shift associated with a change in social roles and emotional attitudes.

In summary, the current study expanded the currently limited literature on the TAT among ethnically diverse groups, specifically with regard to the role of spoken language on the yield from TAT narratives obtained from bilingual Hispanic students. We undertook this direction of research using the DMM, which offers a reliable and valid means to measure defense mechanisms. Our data produced some informative findings concerning the language in which TAT stories are expressed, which have practical implications for TAT interpretation.

Implications for Practice

The findings of this study ultimately highlight a key point: language has an important role in DMM defense mechanisms scores derived from TAT narratives. Thus, psychologists should aim to make informed decisions on what language to use when administering personality tests such as the TAT to Hispanic individuals. Recent diversity-centered writings have emphasized that psychological examiners must attend to their examinees' contexts, which include linguistic contexts (Cimbora & Krishnamurthy, 2018), and recently released professional practice guidelines for personality assessment discuss the appropriate use of linguistic interpreters when deemed necessary (Krishnamurthy, Hass, et al., 2022). The current results suggest that scores derived from a narrative technique such as the TAT may differ depending on the language employed by bilingual examinees, which warrants careful thought by test examiners in the provision of language options and/or use of interpreters.

Limitations and Future Directions

A major limitation of this study was its small $N = 21$ sample size, although statistically significant differences were shown. Additionally, the sample of this study needed to be adjusted throughout the course of the study as the initial sample of students from Central American nations was very small. Therefore, students from neighboring nations of Colombia, Venezuela, and Ecuador were added to the sample. Future studies should focus on collecting a larger sample of Hispanic students to increase the generalizability of results. Moreover, future studies could expand the focus to compare differences in the utilization of defenses in a Hispanic community sample. A study of this type could be further expanded by examining TAT narratives delivered in other languages among various immigrant groups in the United States.

On a concluding note, we emphasize that this study did not demonstrate whether DMM scores from English language narratives represent defenses more *accurately* than in Spanish, in other words, if the higher frequency of defense mechanisms in English implies greater psychological difficulty. The examination of trends from future studies with various bilingual samples will be necessary for addressing this question and to inform best practices in the choice of language of expression for TAT assessment.

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Psychological Measurement in Transgender and Gender Diverse Populations: A Comprehensive Review of Published Self-Report Measures

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Psychological tests and measures with well-established psychometric properties for use in the general population have not been adequately tested for the evaluation of transgender and other gender diverse (TGD) populations. However, guidelines for clinical mental health practice with TGD populations necessitate comprehensive diagnostic and psychosocial assessment of gender-related concerns. Advances in empirical research with TGD populations also require reliable and valid measurement of gender-related constructs. The available selection of published self-report measures of psychological constructs for use with TGD populations has grown rapidly in the past decade. Since 1994, psychometric evaluations of 18 unique self-report measures for TGD populations and three shortened, revised, or updated versions of these measures have been published. This review provides a brief description of each of these 21 self-report measurement instruments for the assessment of gender-related concerns among TGD populations and summarizes the evidence evaluating the reliability and validity of these measures. Overall, the body of psychometric evidence is encouraging but remains in the early stages of development. Strengths, limitations, and areas for future development are noted.

Scientific and lay understanding of people whose experience of their gender differs from the social, cultural, and even legal expectations associated with their anatomical sex at birth has evolved radically over the past century. Just over a century ago in the Western world, the term *transvestite* was introduced in 1910, followed by the term *transsexual* in 1949, with the term *transgender* appearing in 1971 and its shortened variant, *trans*, emerged in 1996 (Whittle, 2010).

In fact, the vocabulary of gender identity terminology has only expanded to reflect a wide range of variations, including identity labels representing binary and nonbinary gender identities. Binary gender identity labels describe people whose gender identity is consistent with the gender assigned to them on the basis of their sex at birth (i.e., cisgender) and those whose gender identity is more aligned with the "other" sex (i.e., transgender). Binary transgender identities include transfeminine (such as male-to-female/MtF/female transgender or trans woman/transwoman) and transmasculine (such as female-to-male/FtM/male transgender or trans man/transman) identities. Nonbinary gender identity labels describe people whose gender identity falls between or outside of the male/female binary (such as genderqueer, gender expansive, intergender, pangender), aligns with both (e.g., bigender) or neither (e.g., agender, gender neutral), or changes over time (e.g., genderfluid). As language and terminology evolve, there is no consensus on a "best" term that is inclusive of all binary and nonbinary gender identities that differ in some way from gender assigned on the basis of sex at birth. Trans and transgender (TG) have been considered inclusive by many, but some consider these terms to be inclusive only of transfeminine and transmasculine binary identities. Transgender, gender nonconforming, and nonbinary (TGNCNB) and transgender and gender diverse (TGD) are generally considered inclusive.

The evolution of these terms outlines the transformation of conceptual understanding of this phenomenon from an issue of pathological sexual deviancy to a disorder of sex to a discrepancy or divergence in gender, all the way to a contemporary understanding of TGD identities as normal variations

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in gender identity (American Psychological Association, 2015). Clinical terminology in the field of mental health has followed a parallel trajectory. The third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM) of the American Psychiatric Association (APA) first introduced transsexualism as a mental disorder in 1980. In 1994, transsexualism was replaced with gender identity disorder (GID) in the DSM-IV, reflecting a shift in understanding from pathological sexual deviancy to a disorder of sex and gender (APA, 1994). By 2013, gender dysphoria (GD) replaced GID.

The diagnosis of GD is characterized by clinically significant gender-related dysphoria or dissatisfaction, discomfort, or distress related to persistent incongruence between gender identity andassigned gender based on sex at birth (APA, 2013). Persistent gender-related dysphoria is therefore central to the diagnosis of GD. It is important to point out that incongruence between gender identity and assigned gender is, in and of itself, not pathological. Some TGD people experience persistent and clinically significant gender-related dysphoria consistent with a diagnosis of GD, while other TGD people may experience transient and/or nonclinical levels of gender-related dysphoria, or little to no meaningful gender-related dysphoria at all. Moreover, the gender-related distress of GD is internal or intrapersonal in nature and should be carefully distinguished from distress stemming from external or interpersonal, social, and cultural forces. TGD populations experience anti-trans stigma, prejudice, discrimination, harassment, violence, and marginalization that can affect mental health (APA, 2015).

Current guidelines for psychological practice with TGD people emphasize an understanding of gender as a nonbinary construct; recognition of healthy identification and expression of gender across a wide spectrum; acknowledgement of the critical role of stigma, discrimination, and minority stress in gender-related distress; and an embrace of gender affirmative care to address GD, gender-related distress, and mental health concerns not directly related to gender. This includes comprehensive diagnostic and psychosocial assessment of gender-related distress, other gender-related concerns, and concerns that are not directly related to gender (APA, 2015).

Traditional psychological assessment instruments have not yet been evaluated for use with TGD populations. Hence, data on the reliability and validity of these otherwise well-established measures is severely lacking for TGD populations. As the topic of gender identity has received increasing attention in psychological research, clinical practice, and the mass media, the development of instruments for the measurement of psychological constructs in the TGD population has grown rapidly, especially in the past decade. In the past 30 years, at least 18 unique self-report measures of psychological constructs designed specifically for TGD populations (plus shortened, revised, or updated versions for at least three of these) have been developed, validated, and published since the 1994 introduction of GID to the DSM-IV. Moreover, 12 of the 18 original measures and all three of the shortened, revised, or updated versions of these measures have been published in just the past decade.

Three prior reviews of published self-report measures designed for TGD populations have been published; however, each of these has been limited in scope. Shulman and colleagues (2017) reviewed eight self-report measures of transgender-related concerns published between 2006 and 2016, whereas Bowman and colleagues (2021) limited their review to only five measures deemed to assess gender-related dysphoria/GD published between 2006 and 2019, covering 11 unique measures between the two reviews. Both reviews noted that, although the available evidence of reliability and validity for these measures was generally promising, there was only limited psychometric data available for any of the measures. Morrison and colleagues (2018) reviewed measures of anti-trans discrimination experiences of TGD individuals from 74 studies. Although reliability data were available for many of the multi-item discrimination measures used, only two measures were supported by psychometric evaluation of factorial, content, construct, and/or criterion-related validity (the 2012 Experiences of Transgender Discrimination Scale measure developed by Poteat [a dissertation study, not reviewed here] and three relevant subscales of a measure published by Testa and colleagues in 2015 and included in this review).

Reliable and valid measurement instruments are crucial for rigorous research and culturally competent clinical practice with TGD populations. A narrative review of the 18 unique self-report measures of psychological constructs designed specifically for TGD populations that have been developed, validated, and published since 1994 (after transsexualism was replaced by GID in the DSM-IV), plus three shortened, revised, or updated versions of these (for a total of 21 measures), is provided to describe the breadth of measurement instruments presently available.

Self-Report Measures Designed to Assess Psychological Constructs in TGD Populations

A brief description of each of 18 published self-report measures designed to assess psychological constructs in TGD populations and three shortened, revised, or updated versions of the original measures is provided below. Information describing the constructs measured, number of items, item response format, and information about subscales/factors is provided for these 21 measures along with the citation for the original psychometric evaluation and a brief summary of any subsequent psychometric validation studies. A concise summary of the reliability and validity evidence available for each of the 21 measures is provided separately in Table 1.

Gender Minority Stress and Resilience Measure (GMSR):

The GMSR is a 58-item measure of distal minority stressors, proximal minority stressors, and resilience factors for use with TGD adults. Four subscales for distal stress factors include Gender-Related Discrimination (8 items), Gender-Related Rejection (6 items), Gender-Related Victimization (6 items), and Non-Affirmation of Gender Identity (6 items). Three subscales for proximal stress factors include Internalized Transphobia (8 items), Negative Expectations for Future Events (9 items), and Nondisclosure (5 items). The final two subscales represent resilience factors: Community Connectedness (5 items) and Pride (8 items). Respondents indicate whether the 17 items describing gender-related discrimination, rejection, and victimization were never experienced or experienced before age 18, after age 18, and/or in the past year. A 5-point scale ranging from strongly disagree (0) to strongly agree (4) is used for the items of the remaining six subscales (Testa et al., 2015).

Gender Congruence and Life Satisfaction Scale (GCLS):

The GCLS is a 38-item measure of level of life enjoyment and distress related to gender over the past six months among TGD adults. Each item is rated on a scale ranging from always (1) to never (5). There are seven subscales in total, with three subscales assessing satisfaction with one's Genitalia (6 items), Chest (4 items), and Other Secondary Sex Characteristics (3 items), and four subscales assessing functioning and life satisfaction, including the Social Gender Role Recognition (4 items), Physical and Emotional Intimacy (4 items), Psychological Functioning (10 items), and Life Satisfaction (7 items) subscales (Jones et al., 2018).

Trans and Gender Diverse Social Anxiety Scale (TSAS):

The TSAS is a 15-item measure of avoidance and fear of various social settings for TGD adults adapted from a measure assessing symptoms of social anxiety disorder. Items are rated on a 4-point scale assessing frequency or severity, ranging from never or none (0) to usually or severe (4). Four subscales measure anxiety related to interaction with familiar people (4-item Social subscale), scrutiny in public settings (3-item Public subscale), systems that invalidate gender nonconforming identities (6-item Organizational subscale), and leaders and other members of religious communities (2-item Religious subscale; Ho &Mussap, 2020).

Transgender Congruence Scale (TCS):

The TCS is a 12-item measure of alignment or agreement between internal gender identity or self-image and external gender presentation or self-expression leading to a sense of authentic expression of one's genuine self for use with TGD adults. Each item is rated on a scale ranging from strongly agree (1) to strongly disagree (5). Subscales measure Appearance Congruence (9 items) and Gender Identity Acceptance (3 items) over the prior two weeks (Kozee et al., 2012). Further validation research replicated the two-factor structure and supported the reliability and validity of the TCS for use individuals seeking gender affirming treatment in Sweden (Iliadis et al., 2020).

Transgender Congruence Scale -10 (TCS-10):

The TCS-10 is a shortened, 10-item version of the original TCS for use with TGD adults. Each item is rated on a scale ranging from strongly agree (1) to strongly disagree (5) over the prior two-week period. Confirmatory factor analysis of the original 12-item TCS using a sample with greater representation of nonbinary and other gender diverse adults supported the two-factor structure of the TCS after removal of two items. Subscales measuring Appearance Congruence (8 items) and Gender Identity Acceptance (2 items) were retained. Lower total scores were found for nonbinary (i.e., nonbinary, gender nonconforming, genderqueer, and other gender diverse identities) than for binary (i.e., transmasculine, transfeminine) participants (Huit et al., 2021).

Trans Collaborations Clinical Check-In (TC^3):

The TC^3 is an 18-item measure of adjustment and comfort with one's gender over the prior two weeks for use with TGD adults. Items are rated on scales of 1-5 for frequency or intensity, with higher ratings indicating greater comfort and lesser dysphoria. Four factors were identified, including Acceptance/Authenticity (8 items), Comfort with Public Perception (5 items), Social Support/Voice (3 items), and Body Dysphoria (2 items), but the authors recommend the use of the total score (Holt et al., 2019). Additional validation research supports repeat administration of the TC^3 for monitoring purposes (Huit et al., 2023).

Gender Identity Reflection and Rumination Scale (GRRS):

The GRRS is a 15-item measure of the degree to which individuals think about their own gender identity for use with TGD adults. Items are rated on a scale ranging from almost never (1) to almost always (4). Three subscales of five items each include Reflection About Gender Identity or positive contemplation, Rumination About Gender Identity or brooding, and Preoccupation with Others' Perceptions (Bauerband & Galupo, 2014).

Transgender Identity Stigma Questionnaire (TGISQ):

The TGISQ is a 13-item measure of exposure to negative attitudes and discrimination toward individuals who do not conform to traditional gender roles for use with Hijra, Jogta/Jogti, and other transgender adults. Response options range from never (1) to many times (4). Subscales measure Enacted Stigma (5 items) or unjust treatment of transgender people and Felt Normative Stigma (8 items) or negative social beliefs about gender minorities (Chakrapani et al., 2017).

Transgender Adaptation and Integration Measure (TG AIM):

The TG AIM is a 15-item measure of adjustment and adaptation to gender incongruence for use with transfeminine or MtF adults. The three subscales of the TG AIM include the 6-item Coping and Gender Reorientation Efforts, 4-item Psychosocial Impact of Gender Status, and the 5-item Gender-Related

Fears scales. The Coping and Gender Reorientation Efforts subscale measures the frequency of thoughts and efforts to manage gender incongruence. The Psychosocial Impact of Gender Status subscale measures the frequency and severity of negative mental health outcomes related to gender status. Finally, the Gender-Related Fears subscale addresses concerns of discrimination, abandonment, and exposure of gender incongruence. Items are rated on 5-point scales of agreement or frequency ranging from 0-4 (Sjoberg et al., 2006).

Transgender Community Belongingness Scale (TCBS):

The TCBS is a 9-item, single factor measure of connection or association with the TGD community for use with TGD adults. Response options range from strongly agree (1) to strongly disagree (7) for each item (Barr et al., 2016).

Strength of Transgender Identity Scale (STIS):

The STIS is a 6-item, single factor measure of degree of self-identification with transgender experience for use with TGD adults. Response options range from not at all (1) to all the time (5) for each item (Barr et al., 2016).

Genderqueer Identity Scale (GQI):

The GQI is a 17-item measure assessing variability in one's conception of and identification along the gender spectrum, intended for use with TGD adults and adolescents (although adolescent representation in the original validation sample was absent). Items are rated on a 5-point scale ranging from strongly disagree (0) to strongly agree (4). Subscales include Challenge the Binary, a 5-item measure of nonbinary experience and identification; Social Construction, a 6-item measure of the extent to which one believes their gender identity was socially constructed; and Theoretical Awareness, a 6-item measure of the degree to which one's understanding of gender identity was perceived to be theoretically or politically informed. An additional 6-item scale subscale, Gender Fluidity, which is not included in the current version of the GQI, measured the frequency of shifts in one's gender identity (McGuire et al., 2019).

Transgender Identity Survey (TIS):

The TIS is a 26-item measure of internalized transphobia in the past three months for use with transmasculine and transfeminine transgender adults. Items are rated from strongly agree (1) to strongly disagree (7). Four subscales include: Pride (8 items) or positive affective reaction to one's transgender identity, Passing (7 items) or desire to present as cisgender, Alienation (3 items) or feeling different from other transgender individuals, and Shame (8 items) or feeling defective in one's identity (Bockting et al., 2020).

Recalled Childhood Gender Identity/Gender Role Questionnaire (RCGI):

The RCGI is a 23-item measure of recollections of gender-typed behavior and closeness to each parent during the first 12 years of life for use with adolescents and adults of all gender identities (TGD and cisgender). Each item includes 4-6 unique ordinal response options. Factor 1 assesses gender identity and gender role experiences in childhood (19 items) and Factor 2 consists of four questions related to parent-child relationships (Zucker et al., 2006).

Transgender Positive Identity Measure (T-PIM):

The T-PIM is a 24-item measure of self-identity and self-worth for use with TGD adults. Each item is rated on a scale ranging from disagree strongly (1) to agree strongly (7). Five subscales include

Authenticity (5 items), or genuine expression and confidence; Intimacy (5 items), a measure of how the individual's identity affects their romantic and sexual relationships; Community (5 items), or a sense of belonging to the LGBT community; Social Justice (5 items), a measure of compassion, commitment to others, and equity; and Insights (4 items), a measure of self-awareness and self-knowledge (Riggle & Mohr, 2015).

Measure of Transgender Behavior (MTB):

The MTB is a 73-item measure that assesses beliefs and behaviors related to transgender experience across the lifespan among transfeminine adults. This measure includes subscales for self-perceived Transgender Identity (26 items), gender expression via Transgender Role (18 items), Transgender Sexual Arousal (11 items) related to cross-dressing, attraction to men or Androallure (9 items), and nonsexual Pleasure (9 items) from transgender expression as a woman (Docter & Fleming, 2001).

Utrecht Gender Dysphoria Scale (UGDS):

The UGDS is a pair of 12-item measures of gender-related dysphoria or dissatisfaction with gender identity or expression, with separate, nonparallel versions for use with MtF and FtM transsexual or transgender adults. Items are rated on a scale of 1-5 with varied anchors. The UGDS has a single factor structure, with a total score that was found to distinguish between transsexual and non-transsexual individuals and between gender surgery applicants who were referred and not referred for surgery in Dutch samples (Cohen-Kettenis & van Goozen, 1997). Subsequent validation research has supported content validity (Galupo & Public-Farrow, 2020) and the sensitivity and specificity of the UGDS to differentiate individuals with and without a diagnosis of GD (Steensma et al., 2013, as cited in Schneider et al., 2016). Li and Zheng (2023) replicated the single factor structure of both versions of the UGDS and confirmed sensitivity and specificity of the measure to distinguish transgender from cisgender adults in China using a cutoff score of 40.

Utrecht Gender Dysphoria Scale – Gender Spectrum (UGDS-GS):

The UGDS-GS, a revision of the original, single factor UGDS, is an 18-item measure of gender-related dysphoria or dissatisfaction with gender identity or expression. In contrast to the original, single factor, 12-item version of the UGDS, which has separate and nonparallel versions for binary transfeminine and transmasculine adults, a singular version of the UGDS-GS may be used with transfeminine, transmasculine, nonbinary or genderqueer, and cisgender LGBQ adults. A two-factor structure was identified with the revised version. Subscales measure Gender Dysphoria (14 items) and Gender Affirmation (4 items). All items are rated on a 5-point scale ranging from (1) completely disagree to (5) completely agree (McGuire et al., 2020).

Gender Preoccupation and Stability Questionnaire (GPSQ):

The GPSQ is a 14-item measure of worry or concern over one's gender and constancy of gender identity, including diagnostic characteristics of GD, for use with TGD adults. Items are rated on a scale of 1-5, with higher ratings indicating more frequent or severe gender-related distress or dysphoria over the past two weeks. Use of a total score for all 14 items is recommended but two factors were identified, including 10 items assessing Gender Preoccupation and four items assessing Gender Stability. A cutoff score of 28 has been demonstrated to distinguish those with and without a diagnosis of GD (Hakeem et al., 2016).

Gender Preoccupation and Stability Questionnaire – 2nd Edition (GPSQ-2):

The GPSQ-2, a 14-item revision of the original GPSQ, measures gender-related dysphoria, including worry or concern over one's gender and constancy of gender identity among TGD adolescents and adults aged 13 and older. Items assessing dysphoria are rated on a 5-point scale ranging from never (0) to always (4) over the past two weeks. Like the original version, use of a total score is recommended.

Optional subscales include an 8-item Gender Preoccupation subscale and a 6-item Gender Stability subscale (Bowman et al., 2022).

Gender Identity/Gender Dysphoria Questionnaire for Adolescents and Adults (GIDYQ-AA):

The GIDYQ-AA is a 27-item unidimensional measure of self-identification of gender identity and feelings of gender incongruence for use with transmasculine and transfeminine adolescents and adults. This measure includes parallel male and female versions for adolescents and adults. The GIDYQ-AA assesses the experience of four dimensions of gender incongruence during the past 12 months, including subjective (13 items), social (9 items), somatic (3 items), and sociolegal (2 items) indicators of gender identity and gender-related dysphoria. Items are rated on a 5-point scale ranging from never (1) to always (5). A cutoff score of three was found to distinguish individuals with and without a diagnosis of GD (Deogracias et al., 2007). Further validation has supported the psychometric properties of the GIDYQ-AA (Schneider et al., 2016), including the sensitivity and specificity of the cutoff score to distinguish between those with GD and other, non-GD mental health diagnoses among both adolescents and adults in North America (Singh et al., 2010) and, after removal of four items, to distinguish between transgender and cisgender adults in China (Li & Zheng, 2023).

Conclusions and Recommendations

Several conclusions can be drawn from this comprehensive narrative review of self-report measures of psychological constructs for TGD populations. First, in agreement with prior reviewers, the state of the field is best described as nascent (Bowman et al., 2021; Shulman et al., 2017). Until recently, only a small handful of measures existed. Few measures have any published validation studies beyond the initial psychometric evaluation report. Some of the older measures, such as the original UGDS (Cohen-Kettenis & van Goozen, 1997) and the GIDYQ-AA (Deogracias et al., 2007), are exceptions, with several validation reports offering evidence of sound psychometric properties for these instruments (e.g., Galupo & Publice-Farrow, 2020; Li & Zheng, 2023; Schneider et al., 2016; Singh et al., 2010). Although these older measures have the advantage of further validation studies supporting their use, these older instruments were developed for use with binary (transmasculine and transfeminine) transgender populations. Although the UGDS has recently been revised to be more inclusive of nonbinary and other gender diverse populations with the UGDS-GS version (McGuire et al., 2020), the revised version made a number of significant changes (e.g., the addition of more items and use of a singular version for all TGD adults rather than parallel versions for transmasculine and transfeminine adults) that likely altered the psychometric properties (as suggested by the two-factor rather than single-factor structure of the UGDS-GS). These older measures appear to have strong properties for use with binary transgender populations but may not hold the same value for nonbinary and other gender diverse populations. Further evaluation of their use with diverse TGD populations is sorely needed.

Second, although many of these measures have not yet undergone subsequent validation research, the initial psychometric evaluations for most measures hold promise. Most of these measures have evidence supporting internal consistency reliability and content, factorial, and convergent construct validity (see Table 1). Efforts to ensure construct validity generally involved both expert review and meaningful engagement of the TGD community. Sensitivity and specificity data were available for those measures aiming to identify clinical levels of gender-related dysphoria or GD (i.e., the UGDS by Cohen-Kettenis & van Goozen, 1997; the GPSQ by Hakeem et al., 2016; and the GIDYQ-AA by Deogracias et al., 2007), with values supporting their use for screening and diagnosis of GD. Test-retest reliability evidence and support for discriminant construct validity and criterion-related validity were less common, however, and should be considered in future validation efforts.

Table 1

Summary of Reliability and Validity Evidence for Published Self-Report Measures for TGD Populations

Name of measure (original citation)	Acronym	ICR	CV	FV	CCV	DCV	CRV	TRR	SS
Gender Minority Stress and Resilience Measure (Testa et al., 2015)	GMSR	✓	✓	✓	✓	✓	✓		
Gender Congruence and Life Satisfaction Scale (Jones et al., 2019)	GCLS	✓	✓	✓	✓	✓			
Trans and Gender Diverse Social Anxiety Scale (Ho & Mussap, 2020)	TSAS	✓	✓	✓	✓	✓			
Transgender Congruence Scale (Kozee et al., 2010)	TCS	✓	✓	✓	✓	✓			
Transgender Congruence Scale - 10 (Huit et al., 2021)	TCS-10	✓	✓	✓	✓				
Trans Collaborations Clinical Check-In (Holt et al., 2019)	TC^3	✔	✔	✔	✔			✔	
Gender Identity Reflection and Rumination Scale (Bauerband & Galupo, 2014)	GRRS	✔	✔	✔	✔				
Transgender Identity Stigma Questionnaire (Chakrapani et al., 2017)	TGISQ	✔	✔	✔	✔				
Transgender Adaptation and Integration Measure (Sjoberg et al., 2006)	TG AIM	✔	✔	✔	✔				
Transgender Community Belongingness Scale (Barr et al., 2016)	TCBS	✔	✔	✔					
Strength of Transgender Identity Scale (Barr et al., 2016)	STIS	✔	✔	✔					
Genderqueer Identity Scale (McGuire et al., 2019)	GQI	✔	✔	✔					
Transgender Identity Survey (Bockting et al., 2020)	TIS	✔			✔			✔	
Recalled Childhood Gender Identity/Gender Role Questionnaire (Zucker et al., 2006)	RCGI	✔			✔	✔			
Transgender Positive Identity Measure (Riggle & Mohr, 2015)	T-PIM	✔		✔	✔				
Measures of Transgender Behavior (Docter & Fleming, 2001)	MTB		✔	✔					
Utrecht Gender Dysphoria Scale (Cohen-Kettenis & van Goozen, 1997)	UGDS	✔	✔	✔	✔				✔
Utrecht Gender Dysphoria Scale – Gender Spectrum (McGuire et al., 2020)	UGDS-GS		✔	✔					
Gender Preoccupation and Stability Questionnaire (Hakeem et al., 2016)	GPSQ	✔	✔	✔	✔				✔
Gender Preoccupation and Stability Questionnaire – 2nd ed. (Bowman et al., 2022)	GPSQ-2	✔	✔	✔	✔			✔	
Gender Identity/Gender Dysphoria Questionnaire for Adolescents and Adults (Deogracias et al., 2007)	GIDYQ-AA	✔	✔	✔	✔				✔

Note. ✔ indicates evidence (in original evaluation or subsequent validation studies) supporting: ICR = internal consistency reliability; CV = content validity; FV = factorial validity; CCV = convergent construct validity; DCV = discriminant construct validity; CRV = criterion-related validity; SS = sensitivity/specificity; TRR = test-retest reliability

Third, a wide range of measures assessing a variety of salient transgender-related constructs is currently available, offering researchers and clinicians options. For those who are interested in the identification or diagnosis of GD or detection of clinical levels of gender-related dysphoria, the UGDS (Cohen-Kettenis & van Goozen, 1997) and the GIDYQ-AA (Deogracias et al., 2007) offer cutoff scores that have been found to have excellent sensitivity and specificity to distinguish between those with and without GD among transmasculine and transfeminine adults (and in the case of the GIDYQ-AA, among adolescents). The newer GPSQ (Hakeem et al., 2016) offers a cutoff score with excellent sensitivity and specificity for GD among binary and nonbinary TGD adults. From a less clinical perspective, measures such as the GCLS (Jones et al., 2018) and the TCS and TCS-10 (Kozee et al., 2012 and Huit et al., respectively) assess gender-related congruence/incongruence and distress. For those interested in the assessment of both intrapersonal and interpersonal aspects of TGD experience, the GMSR (Testa et al., 2015) assesses external (or distal, such as discrimination and victimization) and internal (or proximal, such as internalized transphobia and concealment of identity) minority stress experiences. For those interested in resilience, coping, and positive aspects of TGD experience, the GMSR (Testa et al.) offers subscales assessing community connection and pride, while the TCB (Barr et al., 2016) assesses community connection, and the T-PIM (Riggle & Mohr, 2015) assesses community connection, intimacy, authenticity, and insight.

Fourth, there are measures that are inclusive of a range of TGD identities and measures that are tailored to specific gender identity subgroups. Most of the scales developed in the past decade have been geared toward inclusive TGD populations, while several of the older measures are intended for use with binary transfeminine (TG AIM; Sjoberg et al., 2006) or transfeminine and transmasculine (e.g., the UGDS by Cohen-Kettenis & van Goozen, 1997 and the GIDYQ-AA by Deogracias et al., 2007) populations. While some may criticize the limited inclusivity of these measures that may have limited value for nonbinary or other gender diverse populations, it is also important to remember that it is unlikely that the experiences and needs of individuals with transfeminine, transmasculine, and nonbinary identities are identical. In fact, while there is sure to be some shared TGD experience, there is also sure to be unique experiences for these subgroups of the TGD population. Noteworthy differences in scores between transfeminine and transmasculine as well as binary and nonbinary subgroups have been found (e.g., Ho & Mussap, 2020; Huit et al., 2021). While these may represent measurement error, these may also be a reflection of actual subgroup differences. Determination of normative ranges for various subgroups using inclusive TGD measures and the development of measures for specific TGD subgroups would enhance our understanding of both the shared and distinct experiences within the TGD population. One notable absence is a measure designed exclusively for nonbinary populations. A measure capturing the unique experiences of nonbinary people, including those experiences that may be distinct from their binary transgender counterparts, could help to fill this gap.

Fifth, there is a lack of measures addressing other aspects of diversity within the TGD population. Researchers developing measures for TGD populations are to be commended for their efforts to enhance our understanding and ability to assist a small and hard-to-reach population. Obtaining samples of the TGD population is no easy task and convenience samples of volunteers (or clinical samples of people seeking care) may not be representative of the TGD population. The measures reviewed here have been created around the world, including the US, the Netherlands, Australia and New Zealand, and India, among others, representing geographic diversity. These measures may be adopted and used in other countries and other cultures; however, additional validation of cross-cultural adoptions is not always reported (for one exception, see Iliadis et al., 2020). Among measures developed in North America (and elsewhere) racial/ethnic and socioeconomic diversity within the samples was often limited.

Intersectionality of gender identity with other minority statuses is viewed as an important consideration (APA, 2015) and greater attention to the inclusion of Black, Indigenous, and People of Color (BIPoC) would advance the field of TGD self-report measure development. This critique also extends to

age. Although a few measures have been developed for use with adolescent TGD populations, adolescents have rarely been adequately represented (or even included) in the samples obtained for published reports on psychometric evaluations. The GIDYQ-AA (Deogracias et al., 2007) and GPSQ-2 (Bowman et al., 2022) are exceptions to this, while the GQI (McGuire et al., 2019) included adolescents in the development and, to some degree, in the validation of the measure. Given the importance of developmental timing in gender-affirming medical interventions, high quality assessment measures for adolescent TGD populations are critical.

Finally, the validation of self-report measures of non-gender-related constructs for use with TGD populations would advance research and clinical practice with TGD populations. "Established self-report measures for anxiety, depression, and other common clinical concerns have not been validated with TGD samples" (Holt et al., 2019, p. 1138). As noted in the introduction of this paper, TGD populations may experience gender-related distress and distress that is not directly related to gender. While it is imperative to have measures of gender-related distress (and strength, coping, and resiliency), it will also be important to know how measures that are widely used in the general population function for TGD populations. Professionals involved in clinical assessment are routinely cautioned against the use of measures in populations for which normative or validation data are unavailable. In the clinical realm, knowledge of the normative score ranges or cutoff scores for TGD populations on measures of anxiety, depression, somatization, body image, and other clinical mental health concerns would help to enhance the assessment process for TGD people.

The available selection of self-report measures of psychological constructs for use with TGD populations has grown exponentially. While evidence of reliability and validity remains preliminary for many measures, the emerging evidence is promising. Sustained attention and effort in this area can increase the quantity and enhance the quality of measurement instruments for TGD populations, facilitating rigorous empirical research investigations, and enhancing culturally competent clinical care for TGD individuals in the future.

Note:

We dedicate this work in memory of the late Marie Sjoberg, a devoted scholar of and advocate for transgender issues, and a cherished colleague and friend. We thank Chris McArdle for his valuable editorial contributions to this work.

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Performance of patients with Psychosis on Human Figure Drawing Test (HFDT)

Jasar Khan & Deapti Mishra

Conditions of chronic psychosis such as schizophrenia and mania are likely to result in several salient changes in the patient's personality and result in several cognitive changes. Clinical psychological testing specialization constitutes a specialized form of testing that focuses on differentiating individuals based on the nature and degree of psychopathology. The critical role of psychological assessment in treatment planning has been increasingly recognized in recent years because of its significant role in diagnostic and psychotherapeutic intervention strategies. The HFDT is designed to enhance the time-honored projective analytics aspects of human figure drawing analysis. The aim of the present study was to understand the HFDT profile of Indian patients with Psychotic conditions. The sample consisted of 80 patients with Psychosis diagnosed according to the ICD 10 DCR (1993) criterion, drawn from IPD and OPD of Gwalior Mansik Arogyshala, Gwalior, M.P., India. The sample included people of both sexes and in the age range of 18-50 years. Materials: Human figure drawing test (HFDT) by Mitchell et al. (1993). Results indicated that Indian patients with psychosis drew several specific features such as a small-sized figure, left placement, gross disproportion, unequal arms, heavy lines, genderless figures, developmentally indistinguishable features, naked without genitalia, and omissions of various parts. The authors concluded that there are several qualitative and quantitative variations on Human Figure Drawing test features in Indian patients with psychosis.

Introduction:

Conditions of chronic psychopathology such as psychotic conditions of schizophrenia and mania are likely to result in several salient changes in the patient's personality and result in several cognitive changes, the ultimate outcome of which might be a deterioration in cognitive and personality functioning. It may reflect a progressive impairment or decline of intellectual and personality functions such as memory, reasoning, concentration, communication, and emotional response.

The critical role of psychological assessment in treatment planning has been increasingly recognized in recent years because of its significant role in diagnostic and psychotherapeutic intervention strategies. One such assessment method is figure drawings; these are performance-based measures in which persons being examined draw pictures of people or objects. One type of Figure Drawing method is the Human Figure Drawing Test (HFDT) alternatively known as the Draw a person Test (DAPT) which is designed to provide an objective approach based on traditionally projective clinical assessments. It is based on the Projective hypothesis given by L. K. Frank (1939). The unique contribution of the HFDT is the application of empirical data to assist in qualitative analysis. The HFDT quantitative scoring system reflects the author's observation that normal individuals draw identifiably normal drawings and that quantifiable variation from normal are found in the drawings of individuals with cognitive deficits due to psychopathology on other conditions. The HFDT allows the clinician to compare an individual's drawing of people in non-clinical settings as well as to the drawings of psychiatric patients diagnosed as depressive, antisocial, manic, paranoid, schizophrenic, organic, and intellectually disabled (Carlson, et. al., 1973; Kokonis, 1972; Matto, et. al., 2005). The drawing can be evaluated in terms of cognitive impairment level based on the number of variations from normative standards (Mitchell et al., 1993).

The HFDT has been used with varying aims in research however there seems to be a dearth of literature regarding persons with psychosis. Researchers such as Tryon (1964) used HFDT; Harold et al. (1966) applied the Draw-A-Person test to distinguish schizophrenics from normal control subjects, and significant differences were found. In the Indian context, the figure drawing test has been used for varying populations such as prisoners (Chandramani et. al., 1995) and children. (Hibbard et. al., 1987; Bardos and

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Keyword: Human Figure Drawing Test, Psychosis

Doropoulou, 2014), psychiatric groups such as mania (Shukla et al., 2012) and patients with schizophrenia, mania and non patients (Kumar et al., 2004).

The aim of the present study is to understand the HFDT profile of Indian patients with Psychosis. There seems to be a dearth of research regarding the use of HFDT in the Indian subcontinent due to its limited use despite its ease of administration and valuable diagnostic data regarding the cognitive and personality variables of the patient. Research using Human Figure Drawings with adult psychiatric patients is nascent. All previous research with adult psychiatric groups has employed a relatively smaller sample size, usually below 30 in number (Shukla et al., 2012, S. Kumar et al., 2004) Moreover, studies on any variations in terms of performance in Indian population and western normative data regarding the drawings by clinical population in India are missing and cultural variation in the drawings of patients have long been ignored. The HFDT is an easy-to-administer, performance-based tool that offers significant data in a short time regarding the personality and insights into the nature of active psychopathology; however, a very few research has been conducted with its use. Keeping in view these points, the current study aims to see the Human Figure Drawing Profile of Indian patients with psychotic conditions.

Material and Methods:

Sample: The total sample consisted of 80 patients; 12 patients were diagnosed with schizophrenia, 10 with schizoaffective, 34 with Bipolar Affective disorder current episode Mania and 24 were diagnosed with Psychosis not otherwise specified (NOS) according to the ICD 10 DCR (1993) drawn from Outpatient and Inpatient Departments of Gwalior Mansik Arogyshala. The sample included people of both sexes and in the age range of 18-50 years.

Materials: Human figure drawing test (HFDT): An illustrated handbook interpretation and standardized assessment of cognitive impairment by Mitchell et al. (1993) was utilized for the purpose of this research. The participants were provided A4 sheets with a pencil and an eraser. They were instructed to draw their best representation of 2 human figures (one of each gender). The drawings were then evaluated to generate clinical interpretive hypotheses and the same-sex drawing were scored to obtain an estimate of the individual's level of cognitive functioning. Scaled scores including an overall impairment score, distortion and simplification scores, and an organic factor index were computed.

Research Design: The present study has a Cross-sectional exploratory design.

Procedure: Patients meeting the inclusion criteria for research were screened, once the patients were diagnosed by the consultant psychiatrist using ICD 10 DCR (1993) criteria, their consent for the research was sought, following which a rapport was established, the severity of the psychiatric illness was rated using appropriate clinician-rated scales, and then Human Figure Drawing Test was administered on the patients. The HFDT data was then segregated based on severity and diagnostic subgroups based on the psychiatric conditions involved. Qualitative data in terms of drawings were converted into quantitative data using the norms from the test manual, data was then categorized into severity and further analyzed.

Results:

The obtained qualitative data were converted into quantitative data as per the norms and analyzed. The results thus obtained are summarized in the following tables:

Table 1. Composition of the Psychotic condition groups

	Disorder Category	Number	Percentage
Psychotic Conditions (N=80)	Schizoaffective	10	12.5
	Schizophrenia	12	15.0
	BPAD	34	42.5
	Psychosis NOS	24	30.0

Note: N= frequency, %= percentage, BPAD= Bipolar affective disorders, Psychosis NOS = psychosis not otherwise specified

Table 2. Comparison of Human Figure Drawing Test (HFDT) indices of Indian diagnostic groups (present research) with those of authors' (J. Mitchell) diagnostic groups (western norms)

Impairment Scores					
Diagnostic groups	**Indian**		**Western**		**T**
	Mean	SD	Mean	SD	
BPAD Mania	13.00	4.03	9.80	3.00	4.90***
Schizophrenia	14.22	4.30	12.10	4.50	2.45**

Note: SD= standard deviation
*p<.05, **p<.01, ***p<.001

Data Indicate, that the two Indian groups of the psychotic group (BPAD Mania and Schizophrenia) were significantly different (p<.001) from their Western counterparts.

Table 3. Overall indices of Psychotic condition patients on Human Figure Drawing Test (HFDT)

Indices	**Psychotic (N=80)**			
	Mean	SD	Min	Max
Impairment	13.80	4.13	5.00	22.0
Simplification	4.65	2.94	0.00	11.0
Distortion Score	2.59	1.37	0.00	6.00
OFI	-2.06	3.20	-10.00	4.00

Note: SD= standard deviation, Min=Minimum, Max= Maximum, OFI= Organic Factor Index
Table 3 denotes the various quantitative indices of the Human Figure Drawings performance of patients with psychotic conditions. Results indicate the obtained scores on impairment, simplification, and organic factor indices

Table 4. Qualitative Analysis of Human Figure Drawing Test Features of Psychotic condition patients

		(N=80)	
	Drawing Feature	**N**	**%**
	Size	**n**	**%**
1.	Small size	56	70.0
2.	Large Size	11	13.8
3.	Larger dominant female	11	13.8
4.	Larger dominant male	1	1.3
	Placement	**n**	**%**
5.	Top Placement	39	48.8
6.	Bottom Placement	7	8.8
7.	Left Placement	41	51.2
8.	Right Placement	5	6.3
	Spontaneity	**n**	**%**
9.	Arms folded	1	1.3
10.	Arms pressed to the body	4	5.0
11.	Legs pressed together	0	0.0
12.	Hands behind the back	1	1.3
	Proportion	**n**	**%**
13.	Gross disproportion	49	61.3
14.	Extreme asymmetry	17	21.3
15.	Thin wasted or ribbonlike arms	28	35.0
16.	Thin wasted or ribbonlike legs	27	33.8
	Aesthetic Appearance	**n**	**%**
17.	Stick-Figure	4	5.0

18.	Blank outline	7	8.8
19.	Primitive appearance	23	28.7
20.	Bizarre drawing	21	26.3
21.	Bizarre Hair	9	11.3
22.	Disheveled Hair	3	3.8
23.	Teeth-showing	8	10.0
24.	Spiked fingers-	25	31.3
25.	Petal-like fingers	23	28.7
26.	Internal Organs shown	1	1.3
27.	Disconnected body parts	6	7.5
28.	Geometric shapes	26	32.5
29.	Confused profile	0	0.0
30.	Unequal arms	34	42.5
	Line Quality	**n**	**%**
31.	Light lines	5	6.3
32.	Heavy lines	47	58.8
33.	Reinforced lines	22	27.5
34.	Tremulous wavy lines	8	10.0
35.	(35-B) Less than 50% drawing is sketched	4	5.0
	Drawing Feature- Gender-related features	**n**	**%**
36.	Opposite Sex drawn first	11	13.8
37.	Genderless	42	52.5
38.	Effeminate Male drew by a male	0	0.0
39.	Masculine female drawn by a female	2	2.5
	Age	**n**	**%**
40.	Childlike	14	17.5
41.	Developmentally indistinguishable	31	38.8
	Waist	**N**	**%**
42.	Waist not indicated	25	31.3
43.	Waist emphasis	6	7.5
	Clothing	**N**	**%**
44.	Partially-clothed	1	1.3
45.	Naked without genitalia	49	61.3
46.	Genitalia shown	7	8.8
	Eyes, Ears, Nose	**n**	**%**
47.	Pupils omitted	34	42.5
48.	Very large ears	12	15.0
49.	Nostrils showing	3	3.8
	Feet	**n**	**%**
50.	Long feet	7	8.8
51.	Pointed feet	10	12.5
52.	Boots on feet	1	1.3
53.	Bare feet	7	8.8
54.	Chicken feet	11	13.8
	Drawing Feature- Omissions	**n**	**%**
55.	Head omitted	2	2.5
56.	Hair omitted	25	31.6
57.	Eyes omitted	11	13.8
58.	Nose omitted	23	28.7

59.	Mouth omitted	30	37.5
60.	Neck omitted	35	43.8
61.	Shoulders omitted	41	51.2
62.	Trunk omitted	15	18.8
63.	Arms omitted	21	26.3
64.	Hands omitted	40	50.0
65.	Fingers omitted	29	36.3
66.	Legs omitted	9	11.3
67.	Feet omitted	20	25.0
	Additional Features	**n**	**%**
68.	Shading	22	27.5
69.	Stereotyped	2	2.5
70.	Profile figure	3	3.8
71.	Profile head on front view figure	1	1.3
72.	Clenched fists	3	3.8
73.	Additions or extraneous objects	22	27.5
74.	Transparencies	12	15.0

Note: N= sample size, n= frequency, %= percentage

Discussion:

The mean age of the patients was 36.6%, among these 66.3% were male and 33.8 % were female patients. The majority of (65%) patients studied up to secondary education while 22.5 % were illiterate and only 12.5% were educated up to graduation and above.

The primary objective of the research was to study the variation in the performance of the Human Figure Drawing test between the Indian sample and that of the Western author's diagnostic groups. t-test was employed to see the difference between the two groups in each diagnostic category, the findings, summarized in Table 2, indicate that the diagnostic groups, namely Indian subgroups (BPAD Mania and Schizophrenia) of the Psychotic condition in the present research differed significantly ($p<.01$) from the western counterparts. These differences in scores of HFDT in the Western and Indian sample groups could be attributable to cultural differences as well as manifestations of the disorders, as substantiated in the work of Banarjee (2012), that "schizophrenia is manifested differently in different cultures, often according to the socio-centricity of the culture". Another research by Mackin and colleagues (2004) concluded that intercultural biases affect the interpretation of manic symptoms; this could be one reason why the two groups differed significantly. In the present study too, these cultural differences manifested in some of the drawing features, as found during the qualitative analysis. It was seen that the placement and size of the figure were not in agreement with earlier studies, these cultural differences in manifestation are also replicated in the Indian context by Shukla et al. (2012), other prominent researchers such as Koppitz et al. (1983) in their research with adolescents also found that "some signs and characteristics of Human Figure Drawings are not primarily developmental in nature, they tend to reflect children's attitudes, feelings, concerns, and aspirations which may be determined at least in part by the youngsters' environment and culture", on these lines it can be said that these variations might also be true for adults, as seen in the afore, discussed findings. During the qualitative analysis of drawings by manic patients, it was seen that various religious symbols were drawn on the figures, including a "tilak" on the forehead, figures holding a "Trishool", and sometimes figures depicted God and goddesses were drawn including Lord Shiva and Lord Buddha. Figures offering prayers were also drawn. All these symbols indicated the presence of additions suggesting the presence of Grandiose and religious delusions as well as hyper-religiosity symptoms as seen in mania, which is one of the core manifestations in the Indian subcontinent (Sethi et al., 1993; Bhuyan et al., 2016). It also suggests that culture and religion affect the manifestation of psychopathology. Therefore, significant differences were seen between the Indian and Western diagnostic groups in their performance

on Human Figure Drawing Test. In the quantitative analysis, in the context of the second concern, as depicted in Table 3, it was seen that the patient group had an average raw impairment score of 13.80 with an SD of 4.13, the scores ranged from 5.00 to 22.00. When converted to the scaled score, the impairment score reflects the general cognitive decline in the patient due to the presence of psychopathology, herein seen as psychotic conditions. The obtained average scaled score is 67 which indicates moderate cognitive decline is present in conditions of psychotic psychopathology. These findings are suggestive that the impairment in the conditions of schizophrenia, mania, and psychosis, in general, is excessive due to psychosocial disability; in a study by Lyngdoh et al., (2016), researchers found that the majority of schizophrenic patients having a severe level of disability in global, interpersonal activity, communication and understanding area and moderate level in work and self-care domains, these findings have also been substantiated by the work of Keefe (2012). These findings are also in line with the existing Indian literature as seen in the work of Kumar et al., (2004) and Shukla et al., (2012). The scale score ranged from 53 to 82 indicating a range from mild to severe cognitive deficits in the research group. The Simplification index average score obtained was 4.5 with an SD of 2.94, and scores ranged from 0.00 to 11.00. The Distortion mean score was 2.59 with an SD of 1.37 and ranged from 0.00 to 6.00. Both the distortion and simplification indices are used in adjunct to the impairment scores and are a reliable measure when the impairment scores fall in a broader category. In terms of the Organic Factor index, the psychotic group had a mean score of -2.06, and scores ranged from -10.00 to +4.00. The OFI is obtained by subtracting the simplification raw score from the distortion raw score. According to the author (Mitchhel,1993) when the OFI is or above and the impairment score is high, an organic condition is very likely. When the impairment scaled score is low and OFI is 4 or above the possibility of an organic condition is least likely, if the OFI is -4 or below, the condition of mental retardation (intellectual disability) is implicated. OFI between +4 to -4 is within the neutral category. Since the average value of the OFI of the psychotic patients' is -2.06, it is indicative that they do not have any organic condition or those associated with mental retardation.

With respect to the third concern, in the qualitative analysis, certain prominent features emerged in the drawings of psychotic patients, it was seen that almost 70% of patients with psychotic conditions drew a figure 5 inches or smaller, these findings are similar to the work of Machover (1949) which suggested such indications in states of paranoia, regression, and "a shrunken ego state", psycho-dynamically, these findings indicate the presence of psychosis whereby the ego boundaries are defused and ego integrity is poor; for example, Schilder (1935) and Federn (1952) have related schizophrenia to an impairment of ego cathexis in which the 'ego boundary' can no longer be held cathected to its normal extent, leading to a weakness of ego system and its eventual disintegration. On similar lines, researchers such as Kahn & Giffen (1960) suggested this as an indication of schizophrenia. The second drawing feature relates to the placement of the Human figure, findings indicate almost half of the psychotic patients had a left placement which is suggestive have high levels of aspiration, fantasy, and achievement striving along with a tendency of withdrawn behaviors. (Buck, 1964; Hammer, 1958; Jolles, 1964; Levy, 1950; Urban, 1963). The fourth drawing feature relates to the proportion of the drawing, 61% of the patients drew figures that were grossly disproportionate; these findings are also substantiated by the work of Machover (1949) which deduces that such disproportion indicates severe disturbance, which in fact is true for psychopathology of psychosis, whereby reality contact is severed and there is disruption of the basic integrity of the person as well as Burton & Sjoberg (1984) deduced that it is indicative of psychoses with poor reality contact, perhaps schizophrenia. Authors such as Kalisvaart et al. (2018) drew an inference that interrupted lines, incorrect proportions, and disconnected or missing body parts were considered signs of disconnection or dissociation from the body. The fifth drawing feature analyzed herewith is the aesthetic appearance of the drawings, whereby almost half of the participants drew unequal arms, which according to Machover (1949) indicates a confused state. The sixth drawing feature of human figure drawings is line quality, use of heavy lines was seen in more than half the number of participants (58.8%) indicative of mood volatility (Urban, 1963; Back, 1964) as seen in psychotic states of bipolar conditions. The seventh feature of qualitative scoring was gender-related features, findings indicate that as many as half of the psychotic patients (52.8%) in this

research drew genderless figures, which is suggestive of cognitive and emotional regression (Modell,1951), this hypothesis that there is regression to earlier ego states is psychoanalytically based and supported by empirical research (Federn,1952), the modern-day neuropsychological assessment indicates that there may be significant cognitive deterioration in schizophrenia (Keefe, 2012). However, during the qualitative analysis of the gender variables, it was seen that most patients used a culture- specific accessory - Bindi, to denote the female gender of the drawings. This observation falls in line with earlier research that suggests various culture-specific features might manifest in the drawings. (Koppitz, 1983). The eighth feature corresponds to the age of the figure drawn, 38.8% of the patients drew a developmentally indistinguishable figure which is in line with the findings of earlier research in the Indian context (Shukla, et al., 2012). The tenth feature is related to clothing, the majority (61%) of psychotic patients drew a naked figure without any clothes, and some 8.8% emphasized on the genitalia of the figure drawn, this feature seen in the drawings of the psychotic patients indicates sexual over concerns (Urban, 1963; Machover,1949; Buck, 1966; Jolles, 1971) such as hypersexuality, and excessive sexual risky behaviors as seen in patients with Bipolar – Mania and sometimes schizophrenia in terms of visceral hallucinations. (Kopeykina, et al. 2016). Earlier literature has also emphasized that many sexual abuse victims have been observed to draw genitalia on human figures (Hibbard et al. 1987) which supports psychoanalytic etiology related to unresolved sexual trauma and a history of childhood abuse that might later result in psychopathology in adulthood, researcher such as Hammersley et al. (2003) have found an association between childhood trauma and hallucinations in Bipolar affective conditions; similarly, Janssen et al. (2004) suggested that early childhood trauma increases the risk for positive psychotic symptoms. The eleventh feature of HFDT was related to eyes, large ears, and nostrils showing, almost half of the psychotic patients omitted the pupils, Jolles, (1952, 1964, 1966) concluded that this might be indicative of visual hallucinations, and as many as 15% of the patients of this group drew large ears, these findings are consistent with earlier research findings by Machover (1949) and Urban, (1963) which concluded that these indicate regression and paranoid reactions, other researchers put ideas of reference and hypersensitivity to criticism (Buck, 1950; Griffith & Peyman,1959) as well as hallucinations which is typical of the phenomenology of psychosis.

The thirteenth Drawing feature is concerned with the omission of various body parts, the findings of the present study indicate psychotic patients had a higher tendency to mouth, neck, shoulder, hands, and fingers Some of these omissions have been consistent with other findings as seen in the work of Kumar et al., (2004) and Shukla et al., (2012). When analyzed qualitatively, the omission of hair and nose indicates sexual inadequacy (Buck, 1950) other researchers namely Holzberg & Wexler, (1950) pointed out that this might be an indication of schizophrenic condition, omission of eyes is typical of a schizophrenic condition sometimes suggesting visual hallucinations (Deabler, 1969; Jolles, 1952), and omission of mouth indicates hyper fixation on orality as well as dependency needs, oral aggressive tendencies (Machover, 1959; Urban, 1963) earlier research has linked it to manic conditions (Kumar et al., 2004), Omission of the neck indicates poor impulse control(Koppitz,1968; Machover,1949) which is also characteristic of manic states, omission of shoulders is suggestive of possible schizophrenic condition (Holzberg & Wexler, 1950; Burton & Sjoberg, 1964) omission of arms indicates withdrawal and schizophrenia (Holzberg & Wexler, 1950), omission of hands is indicative of severe psychopathologies such as schizophrenia and organic conditions (Buck, 1950; Urban, 1963), omission of fingers are suggestive of severe pathology and interpersonal inadequacies (Jolles, 1964), The above findings of the omission feature of the Human figure drawings indicate an important distinguishing variable. it can be deduced that the frequency of omissions is more in the drawings of schizophrenic and manic patients and these findings are supported by the existing literature; Hammer (1958) has shown that omitting significant details in drawings is related to using defenses of withdrawal and feelings of emptiness. Similarly, from a thorough review of the literature in this area, Swensen (1968) has concluded that “omission of significant body parts is a fairly dependable indicator of severe pathology”.

Conclusion:

The present study aimed to examine the variation in the Human Figure Drawings of Psychotic groups of the clinical population seeking treatment at Gwalior Mansik Arogyashala, India. Additionally, the goal was to collect normative data from the Indian sample and compare it to that of the original author. The findings of the study are that two Indian subgroups of the psychotic group (BPAD Mania and Schizophrenia) differed significantly from their Western counterparts and several qualitative distinguishing features that are culture-specific were found.

Despite the significant findings of the present study, a few limitations should be acknowledged, the sample size of the study was relatively small in comparison to the original author, the participants in various diagnostic groups were not equal in number, since comorbidity is the rule in psychiatric conditions, frequently associated comorbid conditions such as the presence of personality disorders were not ruled out in the sample. The researchers acknowledge a few avenues which can be explored in the future, such as the presence and contribution of culture in the manifestation of features that are specific to our context. Since this is preliminary research, more diverse and large data can be collected for various clinical subgroups and further comparison can be drawn among the groups in terms of their performance on HFDT. Lastly, the effect of socio-demographic variables on the figure drawings can also be further explored.

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Assessment and Therapeutic Intervention in Erectile Disorder-A Case Study

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The Somatic Inkblot Test- online version (SIT) was taken by a 32-Year-old married male, working as an executive in the private sector, living in an urban Indian joint family. He complains about insomnia, excessive worrying, having sad mood, irritability, decreased interest in work, and decreased sexual appetite. The SIT images helped in understanding psychopathology of the symptoms and brought on the surface many unpleasant memories such as bullying in the school, conflicting relationship with father and dissatisfied intimate relationship. He felt much relieved after the discussion with the therapist. A few sessions of psychotherapy helped with positive results. His responses projected on the Somatic Inkblot Test have been analyzed using content analysis and psychoanalytic interpretation and discussed in this case study.

Introduction:

The Somatic Inkblot test -30 Image online version (SIT) is a semi-structured, projective, diagnostic procedure and an adjunct to psychotherapy. It can be taken as an Individual as well as Group administered test. It is available at www.dubayhealingcenter.com for Personality assessment and Therapeutic Intervention and takes about 30 minutes to complete the test. The online version was released for quick assessment, after 30 years of intense data collection on clinical, organizational, and normal groups. Researchers have reported high reliability and validity of the test (Cassell and Dubey, 2003, Dubey et al, 2019, Kaur and Verma, 1998, Nicolini, 2002: Pershad & Dubey, 1994; Rathee,1998; Singh & Banerjee, 1996; Verma & Kaur, 1999).

The technique is based on spontaneous, individually generated responses to semi-ambiguous figures, which elicit intrapsychic associations specific to the person presented with them. The images evoke symbolism and meanings unique to the responding individual. The test responses (Eleven indices common to Rorschach: R, Movement, H, A, At, Sex, MT/P, Rejection, Aggression, Depression and Paranoia) can be differentiated from peer norms and clinical indices and can be analyzed according to internationally recognized psycho-diagnostic criteria.

The SIT images help in understanding the repressed and suppressed material lying in the storage of subconscious and unconscious realm of the psyche such as interpersonal relationship problems, sexual/intimacy issues, fear of pregnancy and abortion in young/unmarried couples, neglected childhood, uncontrolled emotionality, psychosomatic issues/ fear of health and many more. The procedure is an adjunct to psychotherapy because responses can be further explored to create a more effective treatment plan, and can be re-addressed in later discussions, providing opportunities to elicit deeply defended material. During the administration of the SIT procedure, clients may abreact emotional conflict raised to consciousness by the images, which can be a therapeutic experience.

Objective of the study:

To highlight the penetrative efficacy of Somatic images a case of "Erectile Disorder, Acquired, Situational, Moderate Severity-DSM-5" was selected from Dubay Healing Center, Delhi India. A few clinically significant responses given by the patient are analyzed following Content analysis and Psychoanalytic interpretation to demonstrate the efficacy to reveal unprocessed material repressed in the unconscious mind.

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Key Words: SIT in erectile disorder, Somatic imagery in sexual disorder.

Method:

The client took the Somatic Inkblot test online. It was a blind analysis of the responses followed by personal intervention to confirm the interpretation if it matches with his symptoms and personal problems.

The Case:

The Index client is a 32-Year-old married male, working as an executive in the private sector, living in an urban Indian joint family of high socio-economic status. His family consists of aged parents, his wife and younger sister. He complains about insomnia, excessive worrying, palpitation, constipation, gastroenterological problems, having sad mood, irritability, decreased interest in work, and decreased sexual appetite. All the above symptoms have been ongoing for the past six months. He was referred by his treating psychiatrist for psychological assessment. He took the online SIT in February 2023.

The client has been living with his parents and working from home for the past three years. He always remains under pressure to complete his daily office work and feels tense and anxious. One month back he was transferred to another state. His symptoms aggravated after this, and he started losing interest in work. He got married seven months ago and does not want to live away from his parents and wife. His aged parents also do not want him to relocate at this stage of life.

He started feeling irritated even on small issues. He is under stress from the financial responsibilities of family and his younger sister who is studying abroad. It is discovered later that he is tense and anxious because he is not able to have an intimate relationship with his wife, although he had been sexually active two years back, before marriage, with a girl where he did not face any problem with her.

Results and Discussion:

A few clinically significant responses projected on the SIT are interpreted following Content analysis/ Symbolism / psychoanalytic interpretation:

Image 1. "Bisection of heart". The response indicates "separation anxiety" because he is getting separated from his loved ones. His transfer to another state may cause separation anxiety. This is confirmed from his case history.

Image 2: He has given two responses on this image (a) "Microscopic image of molecule" and (b)" Phoenix rising from the sky" which may indicate some issues with intimate relationships. The phoenix is a symbol for male genitals and rising from the sky might indicate his desire to feel erotic impulses. He confirmed during inquiry that he is not able to have a relationship with his wife because of erectile difficulties.

Image 3: "A cartoon laughing at me". The response may indicate a kind of bullying. Another interpretation may be that it indicates paranoid ideation. The client expressed his sufferings of bullying and a kind of humiliation during his school days by his classmate.

Image 5: In this image he has given two responses: (a) The first "A fat girl doing seductive dance trying to seduce me by bending her body". This response indicates that he does not hold any desire for his partner. The second response was "Two snakes facing opposite directions". Perception of "Snakes facing opposite direction" may further indicate unpleasant love relations as the snake symbolizes male phallic organs. During enquiry, the client revealed that he is not able to have physical relations with his wife.

Image 6: "Two women, one is leaving and the other one is holding hands so that the first one does not get away". The response indicates his desire to live with his partner. During the intervention he expressed his fear of losing his wife because of his sexual incompetence.

Image 9: "Two birds joining their beaks". The response of birds joining beaks is a normal response, but he did not see the birds in action - kissing or playing, which may indicate superficial relationship with his partner. Normally healthy people see two birds kissing in this image.

Image 15: "A deep crater in the ground which is very deep and dangerous". The response "deep and dangerous crater" symbolizes the female phallic part and may indicate severe sexual anxiety. This may also indicate rejection of the adult role (Schafer,1954), which is clear from the case history of the client. The client verbalized his problems of sexual incompetence.

Image 19: "A mother playing with her baby, she is saying something in his ears and the baby looks angry". Father and son are the most common responses in this image. Instead of seeing a male figure he has seen a female and rejected the main theme which may indicate "Oedipus complex and fixation in the Phallic stage". Rejection of perceiving father-figure in this image may further indicate aggression towards him with poor interpersonal relationship. This needs to be probed further and resolved during therapy sessions.

Image 21: "Spider-like creature with tentacles, and a big blue eye on top, it is collecting hearts". The response of the spider collecting hearts is indicative of wishful thinking to have joy and pleasure with someone else. The blue eye on the top may again bring his paranoid ideation and fear to lose his partner.

Image 22: "Artwork of the heart, and the border looks like pretty petals of roses". Seeing the heart is the normal response in this image. Seeing "pretty rose petals" might be indicative of wishful thinking of romance with his wife. It may also symbolize "feminine identification, and masculine inadequacy in men (Schafer, 1954). He fantasizes pleasant feelings with two of his past friends while trying to enjoy physical intimacy with his wife. Psychodynamic psychotherapy was administered for conscious anti-cathexis, with positive results.

Image 23: "Looks like "Dildo kept in tight space". The "Dildo" is the normal response on this image but the "Dildo kept in tight space" may indicate sufferings and painful situation with unpleasant intimate relationship. Snake, spine, missile, sailing boat in sea/river, may indicate symbolic Freudian connotation of male phallic organ.

Image 25. "Broken handle of walking stick". Broken handle of stick may indicate some issue in genital area, sexual conflict, inability to perform, which must be enquired during therapy session. He confirmed that he has anger towards the one who bullied him during school days. Another interpretation of broken stick may be damaged/incapable male phallic organ, as the stick symbolizes Male Phallic organ.

Image 28. "A mother and a baby. Mother is picking up the child from the floor". It indicates affection, care and a good interpersonal relationship with his mother. He confirmed that he loves and respects his mother very much.

He has given four Sex responses on images not imbedded with sexual structure. This may indicate high sexual fantasies and desire of intimate relationship. Avoidance of perceiving sexual content on images embedded with phallic regions may indicate deep-rooted sexual conflict. Patients of sexual incompetency often project such protocol. It is clear from the case that he has a very smooth relationship with his mother and has high regards for her. He has also expressed high regards and love for his wife as he says that she belongs to a very rich, highly respected family and brought plenty of marriage gifts including land property from her parental home. All this fits with the Freudian concept of Madonna-Putana Complex (Kaplan, and Sadock, 2015) which may lead to impotency.

Another interesting factor in this case is that his wife is not very good-looking, still he says that he loves his wife. Further he expresses that in response his wife loves him more than he loves her. This

unexpressed conflict in the form of love and respect on one side, and rejection because of her physical unattractiveness on the other side may lead to such psychological defenses. He has also expressed during therapeutic intervention that he had a successful physical relation with a female whom he degraded.

Conclusion:

The SIT images helped in understanding the psychopathology of the symptoms and brought to the surface many pleasant and unpleasant memories such as fantasies of two female friends, bullying in the school, conflicting relationship with father and dissatisfied intimate relationship. The images helped in hearing the inner cry of the client. He felt much relieved after the discussion with the therapist. A few sessions of psychotherapy helped with positive results.

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Sd/
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What is the Somatic Inkblot Test (online version)?

The Somatic Inkblot test (SIT) is a semi-structured, projective, diagnostic instrument and an adjunct to psychotherapy. The **SIT** is available at *www.dubayhealingcenter.com*, with 30 images, was released for quick assessment, after 30 years of intense data collection on clinical, organizational, and normal groups. Researchers have reported **high reliability and validity** of the test (Dubey et al, 2019) The papers published in the international journal, "SIS Journal of Projective Psychology and Mental Health"(www.somaticinkblots.com) clearly show the advantages of the SIT both in the "individual" as well as "group administration" settings.

The SIT automates the entire "psychological test life-cycle" including administration, scoring, interpretation, reporting and diagnostic collaboration. In addition to quantitative analysis, the SIT facilitates and emphasizes content analysis, psychoanalytic interpretation, and symbolic interpretation via a database of research made available as "hints", "Artificial Intelligence" and case studies. It takes about 30 minutes to complete the test.

The technique is based on spontaneous, individually generated responses to semi-ambiguous figures, which elicit intrapsychic associations specific to the person presented with them. The SIT images evoke symbolism and meanings unique to the responding individual. The test responses (Total R, Human, Animal, Anatomical, Sex, Most Typical, Movement, Rejection and Pathological responses) can be differentiated from peer norms and clinical indices and can be analyzed according to internationally recognized psycho-diagnostic criteria. The procedure is an adjunct to psychotherapy because responses can be further explored to create a more effective treatment plan, and can be re-addressed in later discussions, providing opportunities to elicit deeply defended material. During the administration of the SIT procedure, clients may abreact emotional conflict raised to consciousness by the images, which can be a therapeutic experience (Cassell and Dubey, 2003).

The SIT has an amazingly simple 11 scoring indices common to Rorschach, such as R, H, A, At, Sex, MT/P, Movement, Rejection and Pathological responses (PAS, HAS, Depression and Paranoia). It is less complicated than existing inkblot tests since it emphasizes content analysis.

The Test was administered to different clinical groups – Anxiety, Depression, PTSD, Schizophrenia, Sex perpetuators, Criminals, Neurotics, Marital maladjustment, and the findings were very encouraging. The images take the client back in time and helps to verbalize the repressed material lying down in the storage of unconscious mind. Such verbalization is very useful during therapy session.

The Test was administered to business executives in different situations and as expected, the data revealed several higher mental functions. These were as follows: productivity, imaginative ability, controlled emotionality, good adjustment, and group conformity.

Please visit our website: http://www.dubayhealingcenter.comand take the test to see its simple administration, scoring and interpretation (Quantitative and Content analysis). Please see the Manual of the Test and book "Inkblot Personality Test -Understanding the Unconscious Mind, Dubey, B.L., Banerjee, P. and Dubey Anand (2019) Sage Publications Inc.
Please feel free to write for more information and help on our email given below:

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SIS JOURNAL OF PROJECTIVE PSYCHOLOGY AND MENTAL HEALTH: ACHIEVEMENTS

Journal in WHO's Listing

Members of Somatic Inkblot Society will be glad to know that SIS Journal of Projective Psychology and Mental Health has been listed by World Health Organization (Global Forum for Health Research) among 25 indexed journals that have published the highest number of articles on mental health from LMICs in Latin America, Africa and Asia (Medline and PsycINFO). Extract from table-6 of "Research Capacity for Mental Health in Low - and Middle - Income Countries: Results of a Mapping Project "(www.globalforumhealth.org) is given below:

Rank	Journal	Country	Language
1	Revista de Psicoanalisis	Argentina	Spanish
2	Revista de Neurologia	Spain	Spanish
3	Revista Brasileria de Psiquiatria	Brazil	Eng.,Spani.,Portuguese
4	Arquivos de Neuro-psiquiatria	Brazil	Portuguese
5	Acta Psiquiatrica y psicologica de Amercia Laina	Argentina	Spanish
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
10	Vertex	Argentina	Spanish
11	Journal of Personality and Clinical Studies	India	English
12	Social Psychiatry and Psychiatric Epidemiology	Germany	English
13	Revista Medica de Chile	Chile	Spanish
14	South African Journal of Psychology	South Africa	Afrikaans, English
15	Psychological Reports	USA	English
16	South African Medical Journal	South Africa	Afrikaans, English
17	The Australian & New Zealand Jr. of Psychiatry	Australia	English
18	International Journal of Social Psychiatry	U. K.	English
19	Psychiatry Research	Ireland	English
20	Social Science & Medicine	U. K.	English
21	Revista De Saude Publica	Brazil	Portuguese
22	International Journal of Geriatric Psychiatry	U. K.	English
23	**SIS Journal of Projective Psychology and Mental Health**	**India**	**English**
24	Journal Brasilerio de Psiquiatria	Brazil	Portuguese
25	Psychiatry and Clinical Neurosciences	Australia	English

Journal in ProQuest Listing:

We are glad to inform you that SIS Journal of Projective Psychology & Mental Health has been listed in academic research database ProQuest Psychology Journals™. ProQuest is a company in Michigan, United States. It is a leading provider of electronic databases for academic libraries. Databases are used in over 20,000 academic libraries around the country and around the world including some of the most prestigious higher education institutions such as Harvard, Yale, Princeton, Oxford etc. ProQuest provides abstracts and indexing for more than 640 titles, with over 540 titles available in full text. Users get access to charts, diagrams, graphs, tables, photos, and other graphical elements essential to psychological research.

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