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Editorial

The Linchpin on the Future of Projective Techniques: The Precarious Status of Personality Assessment in the (overcrowded) Professional Psychology Curriculum

Literature reviews regarding practice settings have indicated that, historically, projective methods/techniques (hereon, PT) have been popular clinical tests and relied upon assessment tools in the mental health field in the USA. However, the same cannot be said for clinical/professional academic programs where the professional views of training faculty toward PT have been somewhat contentious, particularly over the past decade. My intention here is to summarize recent survey-based findings on use of PT which should provide a candid perspective on where the status of PT may be in 10 years.

There is very recent evidence that projective assessment is currently a rather neglected evaluation approach by professional psychologists, with the exception of the Rorschach; however, these data were based on very low response-rate (i.e., 17%; see Wright et al., 2017). At the same time, survey data from South America, point to the central role of PT in the assessment process in such countries like Brazil and Bolivia (this issue). The same can be said for Japan, but not Australia. Interestingly, despite a strong psychoanalytic bent, historically, PT are rather ignored in most European countries. Thus, the emerging picture is that PT have pockets of enthusiastic proponents worldwide, with the caveat that support for PT appears to be gradually diminishing, particularly with the recent surge in interest with the evidence-based assessment climate that has permeated the general field of psychological assessment (Bornstein, 2017). Another key factor in the diminutive status of some PT has been the proliferation of abbreviated personality tests and brief symptom-focused scales, evident in the contemporary assessment scholarly literature. Despite these strong headwinds, it is also quite apparent that the death knell for PT has been rather premature, largely reflected in continued research attention directed toward PT by a small minority of devoted followers and proponents who claim that that performance-based testing provides both clinical and ecological value to the assessment process. Thus, the present status of PT has fallen from the apex of popularity of the mid-1900s, but strong remnants of that former heyday still remain. Based on this robust history, the imperative question is: What is the indispensable requisite that will have the greatest impact on the status of PT in the field of psychological assessment in the future?

The linchpin: Graduate-level clinical/ professional training:

My major thesis is that the most salient factor in the *sustainability* of professional interest in PT is the degree of emphasis in graduate-level training with these types of assessment methods, i.e., if faculty do not inspire graduate students in personality assessment, then the next generation of practitioners will undoubtedly not likely consider PT as useful clinical tools in the assessment enterprise. In fact, research data, over the past decade, clearly suggest that the lofty status of personality assessment in the professional psychology curriculum is under serious threat (see Evans & Finn, 2017). Moreover, recent survey-based studies of academic training programs point to a stark diminutive emphasis with PT, compared to test use surveys a decade earlier (see Piotrowski, 2015a). Although several surveys on assessment training in APA clinical psychology have been recently reported, the findings have been contradictory with reference to PT; moreover, the response-rates were rather low (about 33%); this vexes the question-- What is the overall status of personality assessment in the two-thirds of non-respondent programs?

Researchers fail to ask the critical question regarding how much instructional time or coursework are devoted to teaching clinical students specific PT. There are limited recent data in this regard pertaining to professional psychology programs. Noteworthy, a recent dissertation study of doctoral training (Kohns, 2016) found substantial hours devoted to projective techniques (30 hrs.) in assessment courses, 26 hours in the Rorschach CS, and 30 hours in R-PAS. Very recent data from internship settings point to reduced levels of emphasis with PT (Stedman, 2017). In a 2016 study, internship directors reported diminished training emphasis with PT, but (curiously) encouraged pre-internship instruction with these assessment methods.

Another central issue concerns the perennially-overcrowded graduate clinical-professional curriculum--How can students become competently versed (i.e., adequately trained) in individual psychological tests in order to a) enter internship adequately trained in specific types of tests and b) adhere to high standards of competency in assessment?—a major concern espoused by leaders in the field.

I contend that few could argue against the *training emphasis-practice emphasis* nexus regarding psychological testing and assessment. For example, if focus on integrated report-writing is neglected in training, it stands to reason that the quality of professional assessment reports will undoubtedly suffer. A critique frequently noted by internship directors. If faculties do not inspire graduate students on the utility that psychological tests can potentially contribute to clinical effectiveness, then advanced students will tend not to appreciate the robustness and value of psychological tests in both psycho-diagnostics and treatment. Following this logic, if personality assessment is 'Thriving' in clinical psychology training (as promoted in the literature recently), then graduate students' interest in testing should also be thriving. Thus, today's clinical students should be engaged in research on specific assessment tools, just like earlier cohorts of clinical students (pre-1990). To illustrate my contention that projective methods are currently in a diminutive state in training, I performed a keyword search (test mentioned in Abstract) of the *ProQuest Dissertation/Thesis* database for several major PT. Table 1 below shows that, across the past 4 decades, it is in the past several years that there has been a notable precipitous decline in graduate students' research interest in projective assessment. Interestingly, this decline is also concurrently reflected in survey data regarding specific usage of performance-based methods in practice settings since 2007.

Table-1: Number of Dissertations on Individual Projective Methods over Past Four Decades

Tests/Years	1980-1989	1990-1999	2000-2009	2010-2017
Rorschach	457	490	266	132
TAT	168	174	103	33
House-Tree-Person	15	28	11	3

In conclusion, the evidence from the professional literature, based on recent survey-based data in the USA: a) points to a sharp decline in *intensive* instruction with projective techniques in pre-internship academic training over the past decade, and b) a noticeable decline during internship training in the past 5 years. Gazing into the future, as assessment faculty leave the scene, replaced to some extent by clinical faculty with divergent academic interests; the nature of the assessment enterprise may be quite different than it has been in the past. It is disheartening to conclude that proponents of personality assessment, particularly those who embrace projective techniques, will not find a welcome home in the academy (Piotrowski, 2015b). Finally, while findings on test usage from countries outside the USA are available, there is a dearth of data on the status of PT in academic doctoral training worldwide. In order to address this gap in the

literature and to determine faculty and students' views toward PT in university programs overseas, such data are sorely needed.

How Can PT navigate these threatening headwinds? I offer several proactive strategies:

- Continue to publish empirical findings supporting the psychometric properties of individual PT.
- Design studies that clearly show the clinical value and utility that PT provide in idiographic assessment, progress in treatment, and therapeutic outcome; Such findings should support the ecological validity of performance-based assessment.
- Provide rapid-publication, based on both empirical research and insightful commentary, to counter any biased, unsubstantiated critiques of PT that appear in prominent journals; In the past, there were only limited and rather tardy rebuttals to the barrage of incisive, selective disparagement of PT. Prominent among those providing sound scholarship in defense of PT has been Dr. Irv Weiner (see Weiner, 2013); but the field needs to hear from other seasoned proponents of PT as well.
- Assessment faculty in clinical/professional programs must take a strong stand to not exclude didactic/practicum coverage of PT, despite departmental pressures toward inclusion of the myriad of emerging 'specialization' subject areas in professional psychology; Advocates need to provide evidence from the research literature to substantiate their position.
- Faculty with an interest in PT should also encourage and support the general field of personality assessment, since disparagement of 'personality' testing by critics can only foster academic disinterest in PT (see Evans & Finn, 2017, for an excellent review). Collaboration and cohesiveness are essential.
- Both academic and practicing proponents of PT should strive to include projective assessment when the topic of evidence-based psychological assessment is discussed and presented in scholarly articles.
- Finally, PT proponents should encourage and embrace efforts to provide interested colleagues and newly-minted clinical graduates with opportunities for intensive study on PT via workshops and individual mentoring, outside of the academy.

The SIS Journal of Projective Psychology & Mental Health has been a significant publication outlet since 1994 for academics, researchers, and clinicians using PT in personality assessment, case studies and therapeutic intervention. Articles published in the journal are indexed in scholarly academic databases such as PsycINFO, Pro-Quest, and EBSCO. Interested authors are encouraged to submit manuscripts of their research to Chris Piotrowski (Email: cpiotrowski@uwf.edu).

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Efficacy of a Case of Post-Traumatic Stress Disorder

Wilfred A. Cassell and Bankey L. Dubey

The case study involves a technician (welder)who works on the North Slope in Alaska on the oil field. He was in the tank to repair it. He lit the torch, and there was an explosion? He has been in treatment a few weeks, for the major trauma he had just over a year ago. The Somatic Inkblot Series Card version and Video version was administered to him and the inkblots images brought on the surface unprocessed painful material. The SIS images helped as therapeutic aid and Jim showed fast improvement.

According to the DSM, Poet-Traumatic Stress Disorder (PTSD) consists of a series of symptoms which follow a major trauma to an individual. These symptoms are well-documented and a diagnosis can be made on the basis of these. The purpose of this presentation is to show that certain projective testing in addition may have important value both from the standpoint of understanding diagnostically and treating PTSD. The procedure that we will hear about subsequently is the Somatic Inkblot Series. The person (Jim) currently suffering from PTSD has shown fast improvement and doing well. He has been in treatment a few weeks, and -- but he had major trauma just over a year ago. Jim is a technician who works on the North Slope in Alaska on the oil field.

Jim, could you tell us about the incident when you were in the tank and you lit the torch, and there was an explosion? Do you recall -- just give us some of the highlights of that, please.

Jim: Yes. The welder was actually outside of a tank, this large vessel. We were cleaning and doing some work inside of it; ah, ahmn - it turns out there was a little bit of - of gas, that was in part of a pipe that leads to the vessel and when he struck an arc to do some welding, it ignited the gas, in turn caused a quite large explosion. And, ah, I and five others were ah, ahmn, burnt and affected by the explosion.

Doc: How badly were you burned?

Jim: Well, I was burned on about half to three-quarters of my face and neck, and the back of my neck. And, ah, all my, ah, exposed hair was, ah, ahmn, burned and singed. Luckily, I was overdressed and I had a hard-hat on, so I was shielded from some of the heat. I was hit by a lot of paint fragments and melted plastic. And, ah, of Course, just the raw heat from the flame.

Doc: And, sadly enough, some of the people involved were killed.

Jim: Nobody was killed. It's actually amazing that all six of us are still alive. The fireball that came out of there was quite large, it threw there were two people in the vessel that were badly injured. One person that was in front of or two people that were right directly in front of the man way of the vessel, one was thrown off the platform which was about at a two-story level and he had fallen from that level all the way down onto a bunch of pipes and valves until he hit the metal floor below. The man, by the time he landed on the ground, he had no clothes on. His boots were knocked off and he was very badly burned.

Doc: It was horrible. Now, you've had a series of symptoms, and one set of symptoms that is of interest would be your anxiety-laden dreams. We'd like to hear a little bit about those, and I'm interested in those because I think this material, the dream images somehow spill over to ink blot material as well. Could you share just the highlights of some of those dreams, please?

Jim: Well, I have - fortunately I have a lot of dreams about the situation. And, ahmn, lot of dreams about, ah --- I seem to... ahmn; I don't know how to say it.

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Key Words: PTSD, SIS as Therapeutic aid.

Doc: Some of the images of the actual explosion come to mind?

Jim: Well, I see the fireball quite a lot in my dream. I see the image of the panic that was kind of surrounding that whole incident a lot in my dreams.

Doc: And what are you feeling emotionally in those dreams, Jim?

Jim: Confusion and anger; and, kind of helpless. After the explosion, we were all so disoriented. There was a lot of just screaming and yelling and... ahmn, some people were just running around, it seems like, in circles. It was just a really bad thing for me to think about.

Doc: Yes. Okay, well, thank you. At this point I might say a little bit about the Somatic Inkblot Series. Jim took both versions of the Somatic Inkblot Series. The first version is a set of twenty-cards, like the Rorschach or Holtzmann, it consists of inkblot structures. But the inkblots have a structure that resembles certain objects. And it's called Somatic because there are many anatomical images in this series. And we use content analysis in scoring this. When the individual completes the twenty inkblots, we do a detailed inquiry starting with those three images which are most liked. Basically, I do that Since I 'm interested in sort of calming the person down, reducing anxiety in the interview situation, and then going on to the more traumatic, the threatening images. So, when you took the Somatic Inkblot Series card version yesterday, this was your favorite image. Can you tell me what you saw here, please?

Jim: I - - kind of see myself in there; just, aah; I 've --aah; I usually, ahm, picture myself as somebody who has a -- who is always having a good time, in a good mood, and, ahm, and not much bothering me; and just enjoying life (Image 2).

Doc: That was before the explosion and before your trauma?

Jim: Well, yeah. Everything seems to be turned upside-down now.

Doc: Yeah. And then this was another one that you found.

Jim:Yeah, I just it just reminds me of a good, peaceful, loving kind of...

Doc: What do you see there?

Jim: It makes me think about me and my family, and just you know. The arms...

Doc: Yes.

Jim: The arms are kind of almost hugging or holding the heart, it's almost like a… kind of a weird-looking person down below, but it just looks like it's in motion (Image 2).

Doc: Okay, thank you Jim. And then the last one that you found pleasant was this one. What do you see there?

Jim: I just see a couple, just... two people enjoying just kind of being together; just simple.

Doc: Okay, good. Now, the images that bothered you starting with this onethat bothered you, the most - - what do you See there, Jim?

Jim: It just I don't know; it reminds me (Image 14) of several things. It looks kind of like a large bug with pinchers and, ah, pretty, hideous bug; if I saw that in my house I'd definitely kill it. It looks kind of also like a part looks kind of like a brain and it just looks like some things eating at it or something, I don't know. That is just the way it looks.

Doc: And you saw a crucifix in it as well?

Jim: yeah, as - if it was a bug, it looks like it ate, you know, a cross or something.

Doc: Okay. Thank you. And how about this one?

Jim: It looks like a bats face, kind of, with the ears, and the two eyes and nose and mouth with the fangs…. and it also kind of the top portion almost looks like a little like a, umn, almost looks like--- like, tall trees on both

sides, like a pathway, and then, kind of a walkway and then pathway …

Doc: And what feelings of discomfort with this one?

Jim: Ahm, I --- I just ---I don't know; it just-- it just don't --- I just don't like it. Its kind of--- I don't know too much of an edge or something, I don't know what it is.

Doc: Okay. How about this one?

Jim: It looks like a---- kind of face, (Image 8), kind of -- it looks like it's ready to attack something or it also looks like its laughing. It also looks kind of sinister. Umn, it kind of reminds me of some of the confusing dreams I've had.

Doc: In what way, the confusing dreams?

Jim: well, just - I've never really had much... I've never had nightmares, really, pretty much most of my life. And, ahm, lately I 've had a bunch and just --they're confusing to me, and there, ahm,- I mean it's just like this thing here, is just - they' re……..

Doc: And the emotions, what's the feeling tone as you look at this, and then the dreams?

Jim: Uhm, panic, ahm; just -- just like evil things are happening, bad things, pain – suffering.

Doc: And you have had some panic symptoms where your heart will beat rapidly. Could you share those?

Jim: yeah, I---- it's been several times. During the - right after the Oklahoma City bombing there was times where - as soon as I saw it on TV, I woke up the morning it happened and turned on the TV and I had seen a lot of the panic and the chaos, and the people screaming, and crying and yelling. And it just seemed like nobody really knew what was going on or what to do.

Doc: Somehow that reminded you of the…..

Jim: Well, yeah. I that made me feel very uneasy, and not only had I wound up checking my blood pressure, because got my machine sitting in my bathroom. And I was really concerned with the feelings I was having, and I did feel my heart seemed to be beating more pronounced, and -don't know, I talked to my doctor about that.

Doc: Somehow Oklahoma made things a lot worse. You were able to go back to work eventually on the North Slope, but then when you saw these horrible images; it brought forth a lot of your old symptoms and you haven't been able to work since. Is that….

Jim: Yeah, I've worked one day.

Doc: One day.

Jim: And, ahm, it: just - we work with a lot of explosive, ah, environments. Ahm, everywhere we work there's high pressure, or poisonous gases, or, there's always ahm, I'm more nervous about being around those things, to a point where I really didn't even think I was safe.

Doc: Some people see death, here.

Jim: That looks like death

Doc: Has death been on your mind more?

Jim: Well, yeah. I used to not really think much about it. But there have been days where I actually --- for some weird reason I thought that I was just going to die, I don't know why.

Doc: It's been scary. How about this one, what do you see here?

Jim: Two -- some kind of creatures on both sides of like a heart, and they're like grabbing it and eating it, devouring it or something.

Doc: And what emotions do you feel, looking at that?

Jim: I have no idea, what it is. I hate it. (laughs) I don't know what it is.

Doc: Yeah. You've had a lot of anger and rage since this. And that's been a problem. Could you share that?

Jim: Well, I don't like the fact that my sleeping patterns are all messed up. I used to really enjoy going to sleep and not having to worry about bad dreams or anything. And now I

don't enjoy going to sleep. I always have I don't know, I have a lot of bad dreams. I can't think in the last couple of months where I've actually slept solidly all night long.

Doc: So, it's been very difficult. How about this one, Jim?

Jim: Uhm... well, the red part looks like a heart, and this kind of looks like a kind of a skull, the top part there.

Doc: And this bothered you in what way?

Jim: I just don't like it. I don't like looking at things like -- I like enjoyment. I mean, I like things that are more pleasant, I just don't like that.

Doc: Okay. Let's do this last one that bothered you. What do you see here?

Jim: Well... this kind of looks like a--- like a kind of a tail bone, and also in another way it looks like a penis. And this looks like a cage or some type of... don't know, just...

Doc: And what does it remind you of?

Jim: Nothing, really.

Doc: The cage, what comes to mind when you think of cage?

Jim: Just not being able to get out of it.

Doc: Do you feel sort of trapped with your feelings since the…

Jim: Well, yeah, I do. That's what is so stressful to me, is most things never really bothered me that much. And now I 'm finding---- I mean, I can't have just a normal, simple day.

Doc: Mm - hmm.

Jim: Just a carefree day. And you know... I just can't. If I watch something on T. V. or see something on a movie where there are explosions, it just gets me really tense and anxious, stressed.

Doc: Okay, well thank you, Jim. At this point, I'd like to perhaps go on to the second procedure which you completed, called a Somatic Inkblot Video procedure. And this is a more state-of-the-art procedure; it involves inducing a state of high relaxation by presenting two minutes and fifteen seconds worth of flowers. And these are presented in a way that seems to draw the individual into this beautiful garden. And then the individual is taken through an example of how to label images, sixty - two images in all, on an answer sheet, and —with any emotions or feelings. And then upon completion of this, again, the individual is asked to rate the three images which are most liked and the three which are most threatening. Associating the images over time with flowers, after every test image, a flower tends to take anxiety away from the image. The video procedure is closer to a therapeutic procedure than diagnostic in that there can be quite a release of emotions and an abreaction of traumatic material. And I can also administer the video procedure at bedtime, which will stimulate certain dreams which can have therapeutic value in individuals long after they've forgotten their post-traumatic dreams but yet when there's still stress material that has not been resolved. Well, the one that bothered you most was B15, and I'd like you to look at that this morning, Jim, if you would. And we'll have you say what you see. What do you see there, Jim?

Jim: I kind of see that's kind of the way I feel, right there. I see a bunch of knives, and it looks like half of scissors, and…?

Doc: Yes. This is B15, which you found most threatening. And looking at your answer sheet, Jim, you said that - - Simply, you said that this was me. And what did you mean by that?

Jim: well, I the confusion, the sharp knives and - you know, like saw blades and that half of scissors and knives all coming toward the center. Just the black, scribbly things remind me of just…. confusion. That's just kind of the way I feel like.

Doc: How about...

Jim: During the explosion, before the explosion, we were -- I mean, things were

pretty calm. Things were -- we were going about things pretty safe, everything seems to be going okay. We were paying attention to our job. You know, just doing our - - minding our own business and doing our thing. And next thing we know, there was this huge explosion and there's people burned all over the over the place, carrying stretchers, people are hurt.

Doc: There was….

Jim: Stuff…

Doc: Flying, yeah?

Jim: Yeah, I was hit by a bunch of flying debris. You know, but just...

Doc: And then in your dreams you relived that repeatedly.

Jim: Well, in my dreams it's the same kind of thing. I used to never really get nightmares and bad dreams, and now I 'm just hit with all kinds of very stressful dreams. I don't like going to bed at night; I don't like turning off the light because I know - you know, I don't know what's in store, and I just get all those things just remind me of just - like junk, confusion over me.

Doc: Okay, thank you, Jim. Now, the image that bothered you second-most was A11. Could you tell us what you see today in A11, please? I know before you said you saw sharp cutters and two weapons. Tell us about that.

Jim: Just - - just the sharp points on a couple of those lines coming down almost look like a type of a weapon, of some type. And just ... There's jagged edges on that one piece that goes diagonal there. Looks like very... just a Just looks very to me, it just I don't know, just... don't know. (Laughs)

Doc: Any images like that in your dreams?

Jim: Well, that right there, I…I don't know, I feel real confused when I think about my dreams, and this is a very confusing picture.

Doc: Okay. Well go to another image that you found threatening, and that was B19. Jim, you saw image B19 as upsetting previously. What do you see here now?

Jim: It looks like a big - like, bug of some type... grabbing two hearts, and I ... I don't like it because - especially the bottom right, where it's actually kind of engulfing the heart itself.

Doc: You mentioned it was like a cancer before.

Jim: Well, yeah, because it's eating away at what I consider I consider a heart, as stable and clean and pure. And this thing here is just eating it, devouring it.

Doc: Did you ever have a heart -pounding and panic prior to this episode, the way you've had

Jim: No, I've-- the way I feel physically and emotionally now, I've never felt like this in my life. From one day to the next I 'm confused; I never know what my next feeling might be.

Doc: Mm-hmm. Okay, well that's helpful. Some of the other responses evoke some feelings related to the traumatic event and...Can you maybe share how, looking at these inkblots both in terms of the card form and the video form, they have made it easier to talk about it? Because one of the things that we noted before is that you have trouble getting in touch with your feelings. Perhaps you could say a little bit about that, those emotions for you are - it's hard to put words on, and... ?

Doc: I don't really think too much about naming my emotions very much. I 've noticed lately, since I 've started talking with you and with Dr. G, the counselor, that I 've been able to start mentioning how I feel in verbal terms. I do think it's helping. Before -- or right after.

Jim:…I was-- I seemed to be doing okay, and after the Oklahoma City bombing accident I was so --I was having sleepless nights, I wasn't getting out of bed during the day, I wasn't doing any--I wasn't eating very well, I wasn't…

Doc: You were really suffering.

Jim: And I'm thirty two years old and I've never really thought I needed psychologists and psychiatrists and doctors, or anything like that. And things were getting so bad that I forced myself to start talking to some professionals. And I do believe it's helping me because of the way I felt right after the Oklahoma City. I just I hated life for those couple weeks where I didn't seek any professional help.

Doc: Somehow you had a lot of guilt, too. Could you share that guilt?

Jim: Well, that's something that has come out in our talks and with Dr. G also. I guess it seems from the fact that I when we were doing the preliminary work to isolate the vessel, I did a lot of the isolation of that vessel. And I did it just as prescribed by the two parent companies that I worked for. And we went by the letter of everything they said needs to be done, we did it. And we've done major work like this before, and things have always just --as long as we felt -- followed the letter of the rules we set down as safety procedures, everything went smooth with no problem. Nobody got hurt. And think maybe I should have questioned authority, and maybe thought about some of the isolation procedures that were being that we were told to do. And if I probably would have thought about it for a while, I probably would have been able to shut down the whole job and have the managers and administrators re-think their policy. They did get a waiver on one of the isolations that---went against normal OSHA requirements. And that one of the things I really should have -- I felt, and I still feel, that I should have thought more about that, and, and,….

Doc: Sure. But it's important to keep in mind that when something happens to people we care about, we invariably blame ourselves with a sort of irrational guilt. And I think you need to be softer and less harsh on yourself. Since the accident, you've been socially withdrawn. You haven't been going out with friends, or have you done any dating or any of that?

Jim: I went on-- one date in the last four, five… four months. I don't know. And mainly because it was a lunch date. I feel like-- with my mood swings, that I can't really trust myself to go out and be somewhat stable to somebody I only -- you know, I 'm just getting to know.

Doc: Sure.

Jim: And I no, I haven't told my parents about any of this, they don't know I 'm having problems. All my close friends, I haven't told any of them.

Doc: Sure. So you're very isolated, and maybe it's time to think about sharing. The medication, do you think that's helped in some ways?

Jim: Well, the medication I take at night, previously I wasn't able to sleep worth a darn.

Doc: Yeah.

Jim: And it allowed me to actually go to sleep. And that's added a lot more, you know, peaceful time to my nights, you know. Because I 'm able to actually go to sleep. Previous to taking that, I'd lay in bed for, you know four, five, six hours

Doc: Yeah.

Jim: With the lights off, I may not get any sleep at all in that whole time. And I didn't want to go to sleep, because I didn't want to dream.

Doc: And you're less depressed, and the panic attacks are less. And there's also been a transformation in your dreams. You're not having as horrible, vivid dreams of the actual explosion. And… could you share last night's dream, please?

Jim: Well, you're right. I haven't had the more graphic dreams are not as common as they were...

Doc: Sure.

Jim: Last night I had a dream that was kind of - -I mentioned the dream that I had about a week and a half ago, about ---I was in this apartment that I don't live in. And this Green

Ghost, I don't understand the logic behind that came and told me that I needed to, ah, that, that he said, "We're gonna git ya".And…

Doc: Scary, scary.

Jim: Yeah, I was really scared. And I left the house, left the apartment. And I didn't go back in. And I remember I was real hungry and I went and got a ladder, because I didn't want to go into the apartment. I went and got a ladder and I crawled into the window and my brother and sister, whom I don't even live with, were in our apartment.

Doc: Dreams are interesting. They put together various fragments.

Jim: It was--pretty weird. And so I put, like--burrito in the microwave, and I was cooking --- I was getting ready to cook the burrito, or whatever I put in there, and as I pressed the button to start to cook, the microwave exploded outwardly. And since I was on the other side of the window I didn't' t get burned very bad, but my brother, who was standing right there and my sister, they were standing on the other side---- they got burned really, really bad. And…

Doc: So how did you ….

Jim: I should have-- I felt I probably should have told them.

Doc: So you felt guilty there.

Jim: I had to get out of the house. And last night I had a dream that was a continuation of that.

Doc: Okay, let's hear it.

Jim: This happened in my house --which I live in now. And the same Green Ghost-thing came up to me and says "We're gonnagitya". And I'm thinking…

Doc: Very scary.

Jim: Oh, I was very scared. And I, I remember---I remembered that there's -- there was danger in the house and I had to leave the house, and that, I remembered that the microwave blew up once. So, I thought of all the things I didn't want to do. So I thought, I couldn't turn on the light switch, couldn't turn off the light switch, couldn't cook anything, couldn't open the refrigerator, couldn't open any door, couldn't do anything. And I

Doc: You felt helpless.

Jim: Yeah, I...

Doc: Immobilized.

Jim: Then I woke up.

Doc: And what did you feel at that time?

Jim: I was much stressed.

Doc: And was your heart pounding?

Jim: Yes. Yes.

Doc: What's the parallel between the Green Ghost images and this guy?

Jim: It doesn't look the same, but the kind of sinister look and the kind of evil looking face, kind of half-laugh, half-mean face is kind of similar.

Doc: Mm-hmm.

Jim: The figure I had in my dream been kind of being e-e-evil, but yet laughing at me at the same time.

Doc: What does that Green Ghost symbolize, do you think?

Jim: I have no idea.

Doc: Please try.

Jim: I... I don't know. Maybe that know there's, I don't know, I've thought about this before, and I don't can't understand.

Doc: What sort of thoughts.

Jim: Well, I 've tried to figure out what -- I mean, since I've been talking with you, going to your...um you know I 've had meetings. You've kind of taught me how to kind of analyze my dreams a little more and kind of figure out why I feel certain things. And I can't find much of a parallel to that, or: I don't know. Ummm.But I...

Doc: Does it bring to mind death?

Jim: Well, yeah, definitely.

Doc: Tell us about it.

Jim: Well, there's danger in the house, there's danger in the apartment. And if I didn't leave, I'd be dead

Doc: Right. And what's happening is that there's been a transformation in the horrible images. You're not seeing the flashback of the explosion, but you're moving into a safer thing but it's still very scary—the microwave explosion, which is a less threatening thing that the original explosion. As time goes on, those images will melt away of---- even the microwave explosion. Because with therapy, you'll have that, that will fall behind you and you'll feel better. Ah, you won't have these panic attacks during the day. And, so the outlook is very good for you, Jim. It's a lot of suffering. What would you advise to some person who is working in industry and has been exposed to a traumatic event?

Jim: Hmmm. That's tough.

Doc: In terms of getting treatment, and so on.

Jim: Oh, definitely talk to somebody. Umm, I mean, the professionals aren't bad, they do help.

Doc: But it's not easy, it's a little scary, and you know...

Jim: Yeah, I mean like I said, I totally - I didn't like going to see --- I mean, I only go to the family doctor when I need to go, I mean, it's...

Doc: Do you think these videos have...

Jim: Afraid of going to the psychologist or psychiatrist should get over that and just go see somebody.

Doc: And do you think the video and the inkblots have helped at all in talking about it?

Jim: Yes, I do. It's...one thing I like about talking with you and doing some of these things here is that it brings out more of my feelings that..

Doc: It helps get those out.

Jim: Yeah, I have a hard time actually expressing some of the things I feel and why I feel that way. These are helping dredge out some of those feelings.

Doc: Hey, thanks very much. Thanks for coming in, I appreciate it.

Jim: Thank you.

Doc: At this point I would just like to make a few additional points. Jim has left the room, now. And a comment on a few of the additional video image responses... he saw A25 as an ugly bug and rated this as quite threatening. And he said since the Oklahoma Bombing incident particularly, that he's had images of, in his dreams, of being attacked, and the bug was a symbol of that. Ah, this was the image which he found most threatening in the twenty-card form of the test, and perhaps many of you recognize there's some sexual content, female genital symbols buried in there. And he has been socially withdrawn and has not been dating. And image B6, he was well aware of sexual content. And then on A29, an image which has zero sexual content, he saw sexual intercourse. And when we asked him about that, he had had an anti-depressant drug that had delayed ejaculation. So that was an issue going on, accounting for some of the sexual abnormal responses, you might say. In terms of other images which are relevant, he saw A2 as a guy falling, and then saw a human face in the upper part of the diagram. And then this directly related to an image that was in the explosion scene, where a man was sitting down, or after he had fallen. He saw image A4 as something melting, and then, this was a direct replication of the plastic melting objects which threw - - flew at him. Another image that was relevant was that of A17; we did comment on that in the card form of the test. He saw brain and the metal bugs, spoke about corrosion that was occurring on the North Slope and the corrosion of a head. There were some images focusing on brain and head, and reflect his increased brain consciousness associated with his confused thinking since the accident. A few other images that have some relevance would be B2, which he saw as a wound. He has felt

concerned about his body and the wounds that he experienced, plus those of his colleagues at work. One reflecting some degree of hypochondriacal concern was B4, which he saw as a bone infection. This individual is more likely to be health conscious as noted in the interview, with his talking about his cardiac symptoms and palpitations related to the panic that he's experienced. So that represents the overview of some of his responses. I might like to indicate that we have considerable work done in this field; it began in 1959 with development of a few ink blots with Anatomical content to look at the relationship between Somatic symptoms and anatomical responses. And in 1980 we published a book, Body Symbolism, describing the inkblot technique. And that's been translated into Italian and is published in Italy. The video version of the test is described in a journal which began in July, 1994, called The Journal of Projective Psychology and Mental Health. This is published from New Delhi, India, and there's a considerable amount of work going on in India. The Booklet Form of the test having 62 images(1984,1990,997) with an answer sheet (SIS-II) is used more frequently in India. They look at the booklet and write their responses on the answer sheet and that in itself is a very worthwhile form of the test but it perhaps lacks some of the power because the individual is not relaxed with the hypnotic-like suggestions and so on. It's my hope that in the future, the American Psychiatric Association will include in their manual the important piece of information that long after the post-traumatic dreams have faded, when this inkblot procedure is utilized, the old responses can come forth (Cassell and Dubey,2010, Cassell et al, 2000,2014), and especially at anniversary times of the original trauma. And what is interesting here, that -- that can be evoked at other times, such as with the seeing the television images of the Oklahoma Bombing, that in it pulled forth again some of the old, original trauma. And sadly enough, while he was able to function somewhat after the original trauma, having witnessed those horrible Oklahoma TV images, he has not been able to function. But as he indicated in the interview, we're moving away from the horror of those images into symbolic images. A microwave exploding is much less threatening than the green monster in the dream symbolizing his death. And we've been working on that with him, dealing with his death anxiety, and also the guilt. But he has, from the psychiatric standpoint, also, benefited from the anti-depressant medication and some medication, sedating anti-depressant drug as well, to help him sleep. I would invite anyone interested in this methodology to write to either the Somatic Inkblot Center in Anchorage, Alaska, or to the Somatic Inkblot Society in New Delhi(Email: bldubey@gmail.com).

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The Status of the Personality Assessment Inventory (PAI) in Training and Practice: Evidence from the Emerging Literature

Chris Piotrowski

Survey-based 'test use' studies in the 1990s found that the Personality Assessment Inventory (PAI) was not a highly ranked test in the assessment of personality and psychopathology (e.g., Watkins et al., 1995). However, Piotrowski (2000) reported that the PAI was indeed a well-respected and emerging psychological instrument in both training and practice settings. Since 2000, there have been a number of self-report tests, symptom-specific scales, and 'brief' assessment instruments introduced in the personality/psychopathology domain. Moreover, in recent years, there has been a diminutive emphasis with projective techniques (Bates, 2016; Piotrowski, 2015). Noteworthy, regulatory restrictions on the feasibility of providing multimethod assessment services has also been a headwind in professional practice (Piotrowski, 1999). Due to these challenges to psychological testing practices, over the past 2 decades, a robust examination on the status of the PAI seems in order. To that end, the author identified, through an extensive literature review, survey-based studies with regard to personality assessment that reported on graduate-level training in psychological testing and test usage patterns from 1995-2017. This search yielded 35 articles and dissertation studies which served as the data pool for the current review (Training settings, n=10; Practice settings, n=25). The current analysis indicated that 47% of the 15 studies since 2007 reported that the PAI has been: a) recognized and relied upon to a high degree in both assessment training and practice, and b) embraced by clinical and neuropsychologists, but rather neglected by counseling and school psychologists. Notably, the PAI is a well-respected and preferred assessment instrument in the sub-specialty of forensic psychology. These findings point to the fact that in the USA, among broadband instruments, the PAI currently ranks second (behind the MMPI-2) in popularity, and has surged ahead of the Millon inventories and the NEO-PI in the past 10 years in terms of widespread acceptance. At the same time, the PAI has not made its mark in practice settings in countries outside the USA, based on the findings of recent survey-based studies from overseas (Egeland et al., 2017; Evers et al., 2012; Wechsler et al., 2014).

The Personality Assessment Inventory (PAI) has emerged as highly visible assessment instrument in the mental health literature (Blais et al., 2010; Morey, 2007, 2014; Weiner & Greene, 2008). In fact, a keyword search of the database PsycINFO (conducted February 8, 2017) attests to the extensive research attention that the PAI has garnered by scholars (309 total references; 219 journal articles; 32 book chapters; 56 dissertations). Piotrowski (2000) noted that the PAI was gaining professional acceptance, but this analysis was based on limited survey-based research. Thus, the status of the PAI, historically, in terms of degree of usage in both training and practice settings compared to other personality assessment instruments, has not been reviewed (see Groth-Marnat, 2009). The current study aims to address this gap in the literature.

Investigatory Design:

In order to appreciate historical trends on the scope of emphasis and usage of the PAI in graduate-level training and practice/professional settings, the author utilized bibliometric analyses of the extant literature to identify survey-based studies. To that end, a systematic search of the database PsycINFO was conducted, as this research repository is considered the leading scholarly file of research in the social and behavioral sciences worldwide. Table 1 summarizes survey-based findings from 35 studies (including 1 dissertation), of both academic and applied settings, on emphasis and usage of the PAI since 1995.

Findings:

First, response-rates of the reviewed studies varied widely; thus, the conclusions of the

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current analysis findings must be tempered by the unknown views of a sizeable percentage of non-responders from the samples under study. With this in mind, the current analysis showed that, overall, based on data from both academic and practice settings since 1995, the PAI has been emphasized or used to at least a 'moderate' degree in 19 of the 35 (54%) survey-based studies in this review (see Table 1).

Training:

With regard to training settings, prior to 2003 the PAI was emphasized to at least a moderate degree in 3 of the 4 studies. Surprisingly, no 'test use' studies on training settings were reported during the 2003-2012 time frame. In the 6 studies of academic/internship settings between 2013-2017, 4 reported a high degree of emphasis with the PAI. Thus, there is ample evidence that contemporary didactic and practica training with self-report personality inventories/tests places a high degree of emphasis on the PAI, which corroborates earlier reviews of academic and internship settings (see Handler & Smith, 2013). Moreover, the current analysis found that the PAI has surpassed the Millon instruments and NEO Inventory with regard to training emphasis. This is in sharp contrast to academic coverage of specific tests during assessment training in the 1990s (e.g., Piotrowski & Zalewski, 1993). In fact, very recent research has noted that most practicing psychologists have received instruction on the PAI during their graduate training (see Turret, 2016).

Practice:

With regard to professional practice settings, prior to 2007, 12 of the 16 studies in this time frame showed infrequent use of the PAI. However, from 2007-2017, 7 of the 9 (78%) studies indicated either moderate or high reliance on the PAI by mental health practitioners. Noteworthy, the PAI appears to be particularly popular across a variety of forensic evaluation areas (see McLaughlin & Kan, 2014; Piotrowski, 2007 for a discussion). In addition, several of the reported practice surveys focused on the assessment of adolescents where the MMPI-A has been the mainstay instrument (see Archer et al., 1991); only one study in the current analysis reported usage of the newly introduced PAI-Adolescent Version (Meyer et al., 2015), i.e., with regard to training emphasis in clinical psychology programs (see Mihura et al., 2017, p. 158).

Conclusion:

Since 2007, across the 15 survey studies published during that time frame of both training and practice settings, the PAI was reported to be preferred to a high degree in 7 (47%) of these studies. Hence, these findings support the position that although this test had a modest welcome early on (since its introduction in 1991), the PAI has become recognized as a key instrument in the assessment of personality or psychopathology in clinical psychology.

Several other trends in practice or training settings were noted. The PAI tends to be popular with clinical/forensic psychologists and neuropsychologists, but not embraced by professional counselors and school psychologists. This latter point may be attributed to the reality that personality assessment has not been emphasized in school psychology training and master's counseling programs (Belter & Piotrowski, 1999; Flanagan & Esquivel, 2006). Furthermore, there is a dearth of data on the status of self-report and domain-focused inventories/scales in graduate-level educational or training programs in countries outside the USA, although several surveys of practice settings in Europe have appeared (see Egeland et al., 2017; Evers et al., 2012; Muniz et al., 2001; Wechsler et al., 2014). Future research needs to examine didactic issues and identify trends regarding the availability of academic training in the assessment of adults and youth in graduate-level psychology programs worldwide (Oakland et al., 2016; Piotrowski, 2015).

The current findings confirm that the PAI is well-regarded and embraced in contemporary clinical psychology, highlighting this test's central role in diagnostic, mental health evaluation. Moreover, this popularity reflects broader scholarly attention regarding the study of psychopathology and personality processes evident in the research literature. However, the vexing question is-- Which broadband, multi-scale personality inventories will be the mainstay in multimethod assessment (Butcher, 2006; Hopwood & Bornstein, 2014)?-- particularly as competing assessment approaches, abbreviated versions of existing tests, and brief or symptom-specific instruments emerge in the field. Noteworthy, the attributes of the PAI in providing direction in therapy or therapeutic outcome appear to be a rather neglected area of research (e.g., Keddy & Piotrowski, 1992). However, for now (after a somewhat tepid start in the 1990s), the PAI has surged in popularity, based on data regarding assessment practices of academic clinical faculty, internship directors, and professionals in applied settings.

Table 1: Emphasis or Use of the PAI in Training/Practice Settings across 35 Studies (1995-2017)

Study	Country	Sample	Findings
Borum & Grisso (1995)	USA	53 forensic psychologists; Diplomates, American Board of Forensic Psychology	6% use the PAI in evaluation of criminal responsibility; 29% for competency to stand trial evaluations.
Ackermann & Ackermann (1997)	USA	Test usage practices in child custody evaluations	The PAI was not ranked in the testing of parents in these legal cases.
Piotrowski et al. (1998)	USA	Test usage reported by 137 members of the National Register of Health Service Providers in Psychology	PAI was not ranked amongst top psychological testing instruments.
Frauenhoffer et al. (1998)	USA	Surveyed 487 mental health practitioners (psychologists, professional counselors, social workers) regarding test usage	PAI not ranked in 'top 20' tests.
Boccaccini & Brodsky (1999)	USA	Diagnostic test usage in personal injury cases by 80 practicing forensic psychologists	PAI ranked in "Top 10" tests used in legal cases involving emotional injury, but used by only 11% of sample.
*Piotrowski & Belter (1999)	USA	Extent of graduate-level assessment curriculum was reported by training directors from 84 APA-approved internship settings	PAI ranked 4th (15% of sites) in terms of self-report personality tests used by psychology interns.
Camara et al. (2000)	USA	179 practitioners, mostly clinical psychologists regarding test usage	PAI used infrequently by clinical psychology practitioners.
Archer & Newsom (2000)	USA	346 psychologists, working with adolescents	PAI not highly ranked in the assessment of adolescent populations.
Boothby & Clements (2000)	USA	Correctional (prison) psychologists	Amongst a variety of psychological tests, the PAI ranked 9th and used by 10% of correctional psychologists in practice.
*Clemence &	USA	Surveyed 382 internship settings	21% of internship sites indicating preference of

Handler (2001)		on use and training of psychological tests	incoming interns to have had a good working knowledge of the PAI.
*Belter & Piotrowski (2001)	USA	Survey data on 82 directors of APA-approved doctoral clinical/professional psychology training programs on assessment curriculum	In terms of emphasis in objective personality coursework, the PAI ranked 4th (but representing only 11% of sample).
Quinnell & Bow (2001)	USA	198 practicing psychologists; test usage in child custody evaluations	The PAI was not among the top broadband self-report inventories.
*Childs & Eyde (2002)	USA	Course syllabi data, from 84 APA clinical psychology programs, determined emphasis in coursework across assessment methods	PAI not a major component in the assessment curriculum.
Cashel (2002)	USA	162 child & adolescent practitioners in outpatient, hospital and school settings	PAI not ranked highly in the assessment of adolescents.
Bow et al. (2002)	USA	84 psychologists reported on assessment practices regarding sexual abuse allegations in child custody cases	The PAI was used in 5% of assessments of accusing parents and alleged perpetrators.
Lally (2003)	USA	64 Diplomate-status forensic psychologists, test use in court-related evaluations	The PAI was deemed 'acceptable', on average, by about 58% of sample across several forensic domains (mental state evaluation, violence risk assessment, competency, malingering).
Ryba et al. (2003)	USA	Psychologists' test usage in juvenile competency to stand trial evaluations	PAI not used.
Shapiro & Heick (2004)	USA	Determined assessment practices of 648 school psychologists (NASP members)	Only about 10% use multi-scale personality tests across recent cases involving psychological assessment issues.
Elhai et al. (2005)	USA	227 members of the International Society for Traumatic Stress Studies; test usage in post-traumatic assessment (PTSD)	The PAI-PTSD Scale was used by 6% of respondents.
Rabin et al. (2005)	USA/ Canada	Assessment practices of 747 clinical neuropsychologists	In the area of 'Return-to-work', the PAI ranked 11th, used by 5% of respondents.
Archer et al. (2006)	USA	152 forensic psychologists' use of projective techniques in court-related assessments	PAI was the 2nd most frequently relied upon multi-scale personality inventory (behind the MMPI) in the forensic evaluation of adults; used by 53% of respondents.
Smith et al. (2010)	USA	404 members of the International Neuropsychological Society or National Academy of Neuropsychology surveyed on personality assessment practices	The PAI was used by 50% of the respondents to some degree; 19% use it 'sometimes'.

Donoso et al. (2010)	USA	150 professionals who conduct vocational rehabilitation evaluations	Amongst a variety of types of tests, the PAI ranked 20th and used by 17% of sample.
Ackermann &Pritzl (2011)	USA	213 forensic psychologists surveyed on tests used with parents in child custody evaluations	Based on 2008 data, 28% of the sample use the PAI in assessment of parents in custody evaluations.
Evers et al. (2012)	17 countries	(17 European countries) Based on survey data in 2009, reported top tests used by over 12,000 practicing psychologists in Europe	Although several personality inventories (MMPI, 16PF, NEO-PI) were used moderately, the PAI was not used frequently.
*Neukrug et al. (2013)	USA	Based on survey data from 210 counselor educators across the U.S., this study examined graduate-level coverage of assessment instruments by instructors	Amongst a copious list of tests, 66% of instructors (counselor educators) report teaching the PAI (ranked 43rd).
Peterson et al. (2014)	USA	926 counselors (clinical mental health, school, occupational) rated tests of all types regarding usage	Amongst a copious set of testing instruments, the PAI was used occasionally by counselors (ranked 53rd).
Neal & Grisso (2014)	International sample	434 forensic examiners of professional organizations International sample: USA (45%), Canada (7%), Europe (3%), Australia-New Zealand (4%)	Across a variety of forensic/legal domains, the PAI, on average, was used in 10% of referral issues/questions; most frequently in sex offender risk assessment and child custody evaluations (>23% of cases).
*Ready & Veague (2014)	USA	Compared training in psychological assessment across 3 training models (Clinical-Science, Scientist-Practitioner, Practitioner-Scholar) in APA-Accredited programs	Amongst all categories of tests, the PAI ranked 8th; taught in 57% of APA practitioner programs and 47% of clinical-science programs.
*Bates (2016)	USA	Dissertation study, reporting views of 182 internship directors toward doctoral-level assessment training & usage of specific tests by interns	45% of the directors preferred pre-internship preparation with the PAI; 62% of internship settings use the PAI; 39% use PAI frequently (ranked 5th amongst a variety of psychological tests).
Rabin et al. (2016)	USA & Canada	Testing practices of 512 neuropsychologists; members of INS and NAN	Among 'Top' tests for 'personality assessment', the PAI ranked 3rd (behind the MMPI and BDI).
*Ready et al. (2016)	USA & Canada	Views of Directors of internship settings on pre-internship preparation in assessment; Data based on 236 APPIC sites	About 10% of respondents noted that the PAI was emphasized in internship training; This may underestimate PAI use in internship settings, however, as the survey form did not list the PAI.
Wright et al. (2016)	USA	279 members of APA in practice, with an interest in Assessment;	Amongst all types of psychological tests, the PAI ranked 13th, representing 38% of

		Data based on low response rate (17%)	respondents; used more frequently (by 63%) in forensic settings.
*Mihura et al. (2017)	USA	Of 244 APA-accredited doctoral clinical psychology programs, 83 usable surveys were analyzed; emphasis on specific tests with regard to 'coverage' in assessment training	The survey, in a general fashion, inquired about 'coverage' in graduate-level assessment courses and practicum; The PAI was taught in 76% of these programs, 2nd only to the MMPI in the area of Personality/Psychopathology; the PAI-Adolescent Version was covered in 29% of programs across training models.
*Stedman et al. (2017)	USA	APPIC internship programs reported on 'Assessment' training offered and on pre-internship expectations of testing competency	In terms of internship training emphasis in assessment, the PAI was highly regarded by 59% of Directors and ranked 2nd (just behind the MMPI).
Note. Studies (n=10) marked with asterisk (*) focused on graduate/internship training.			

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The Value of Projective/Performance-based Techniques in Therapeutic Assessment

Hale Martin and Marita Frackowiak

Psychological assessment, and projective/performance-based assessment in particular, has seen a decline in recent years, both in training and clinical use. This trend is alarming and raises concerns about the loss of important clinical tools and its effect on the field of psychological assessment as a whole. In this article, we discuss two ways in which this shift affects the practice of psychological assessment: 1) loss of clinically important information accessed only with projective/performance based methods and, 2) loss of an opportunity to connect with clients and help them see aspects of their lives through therapeutic and collaborative use of projective/performance based measures, as practiced in Therapeutic Assessment.

Psychological assessment has been a central aspect of the training and work of psychologists throughout the history of the profession. However, recent evidence shows that since 1995 training in psychological assessment has decreased (Piotrowski, 2015a; Ready and Veague, 2014). While training in general assessment remained relatively stable in the period 2001 to 2011, the nature of that training shifted away from psychological assessment to training in cognitive and achievement measures and symptom rating scales. That shift has been particularly dramatic in projective and performance-based personality tests (Ready and Veague, 2014). Evans and Finn (2016) and Piotrowski (2015b) identify a number of potential reasons for the decline in training in personality assessment over the years.

The question that arises in the midst of this trend is what is gained and what is lost? Potential gains include the fact that self-report measures take little clinician time to administer and score, and they are easy to interpret, requiring little training; whereas, performance-based measures take more time and drain the limited resources available to address client concerns. Thus, with this trend precious resources can be directed toward what is perceived as effective treatment. Self-report tests are now widely and sometimes exclusively used. On the surface this seems like a favorable development.

However, there is substantial evidence that assessors are losing important fundamental underpinnings of effective assessment and even emerging, effective treatment opportunities. Martin (2016) identifies two main ways that projective/performance-based techniques are useful in psychological assessment. The first is providing access to secrets hidden away in the brain and inaccessible through self-report techniques. He argues that assessors are abandoning valuable tools that often are the only way to detect and understand important psychological issues and dysfunctions, such as split-off affect states, including trauma and developmental trauma (Finn, 2007). The second is the opportunity through Therapeutic Assessment to have powerful therapeutic effects with clients through experiential applications of projective/performance-based techniques (Finn & Tonsager, 1997).

Evidence from Neuroimaging Techniques:

Projective/Performance-based measures help identify determinants of dysfunctional behaviors and emotions not detected by self-report assessment. Studies using functional magnetic resonance imaging (fMRI) show parts of the brain that are activated by projective stimuli such as the Rorschach inkblots. These studies help illuminate what areas of the brain are tapped and thus the significance of projective responses. A recent fMRI study by Giromini et al (2017) identified

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the areas of the brain active while viewing the Rorschach cards and searching for responses that are not active while staring at a cross pattern. Results of the study show large portions of the temporal and occipital areas, which are involved in visual perception and processing, particularly complex visual associative tasks; areas in the frontal and parietal lobes associated with attentional processes; and sub-cortical areas related to the limbic system, which are integral to emotion perception and processing. The activations they detected were largely bilateral, involving both right and left brain. These findings are consistent with what would be expected given what is known about the Rorschach task and importantly show involvement of emotions in this seemingly cognitive task.

Asari and his colleagues (2010) have used fMRI to show brain activation when respondents provide a “unique percept” to a Rorschach card (i.e., one not seen by any of the 217 normal controls for the study). These unique responses correspond to form quality that is scored unique or distorted (FQu, FQ-) in the Comprehensive System (Exner, 2003). The primary correlate of unique responses is increased involvement of certain limbic areas influenced by the amygdala, especially the right amygdala. The amygdala is central to emotional experience and emotional memory; thus, its involvement points to the influence of emotional experiences in certain Rorschach responses that have significant interpretive value. These results are consistent with Shore’s contention (2009) that memories and affect states connected with trauma and developmental trauma are primarily stored in the right hemisphere of the brain and associated limbic system. The implication here is that effects of trauma are not easily accessible to the logical left hemisphere and are thus out of awareness. It takes projective stimuli to access important experience and information.

Another important fMRI study by Bucheim et al (2009) involving the Adult Attachment Projective (AAP; George & West, 2012) supports this contention in dramatic fashion. They compared the amygdala activation of two groups of women while viewing the seven stimulus cards of the AAP, which were designed to increasingly activate the attachment system. The control group was composed of women who were classified as having resolved attachment while the second group was composed of women classified with unresolved attachment (characteristic of developmental trauma). The results showed the average amygdala activation for each group for each of the seven cards. The resolved attachment group showed amygdala activation for each card close to an average amygdala activation level. The unresolved group showed significant under activation to the first two cards, which only mildly activate the attachment system, and a linear trend upward to significant over-activation to cards 5 and 7. These results suggest that those with resolved attachment status are able to modulate their amygdala/emotional response to attachment-activating stimuli while those with unresolved attachment status (i.e., those with significant developmental trauma) have difficulty modulating their emotional response to attachment activating stimuli. The unresolved strategy seems to be to blunt all emotional responsiveness, but when this fails they become over activated and subject to the consequences of emotional dysregulation.

These studies show the importance of assessment instruments that can tap into right brain-limbic processes to collect data that help assessors see what is otherwise invisible and not detectable by self-report measures. The fact that many assessors are abandoning these important projective/performance-based techniques is thus a significant loss.

Therapeutic Assessment:

The second way projective techniques are useful in psychological assessment is in providing experiences for the client that help the client understand the root of perplexing problematic behavior by connecting the rational, linear functions (often referred to as left brain functions) with the emotional, holistic

functions (often referred to as right brain functions). As one might expect, this experiential understanding is enormously therapeutic.

Background:

Collaborative assessment was formally started by Constance Fischer in the late 1960s (1985/1994). It is grounded in phenomenology and emphasizes collaboration with the client. Working collaboratively solves some of the shortcomings of traditional assessment, including an overemphasis on nomothetic data at the expense of the person. Inspired by the innovators behind collaborative assessment (Fischer, 1985/1994; Handler, 1996; Purves, 2002), Finn developed a semi-structured approach to assessment that he calls Therapeutic Assessment (TA; Finn &Tonsager, 1997; Finn, 2007). It is a paradigm in which psychological testing is used as the centerpiece of a brief psychotherapeutic intervention. The cornerstones of TA are collaboration, curiosity, compassion, humility, openness and respect (Finn, 2009)—essential ingredients for an optimal working relationship (Fischer, 1982). A meta-analysis by Poston and Hanson (2010) confirmed the impressive therapeutic effects this approach to assessment delivers. In fact, these researchers conclude that this approach to assessment should become central to training and practice and that managed care should incorporate it as a short term, effective, evidence-based treatment.

Projective techniques play a central role in TA not only by providing important information as demonstrated by neuroimaging techniques, but also in creating an experiential mechanism that can help the client deeply understand what was previously inaccessible.

Semi-Structure of Therapeutic Assessment:

TA generally follows a six-step process but allows deviations that match the unique needs of each client. General adaptations have been made for children and families (Tharinger et al, 2011), adolescents (Tharinger et al. 2013), and couples (Finn, 2007). The typical TA starts with an initial session in which the client's questions for the assessment are identified. These questions provide the focus of the assessment, and guide the selection of tests to be administered. The next step is standardized administration of the tests necessary to gain nomothetic data to answer the client's questions. However, idiographic data is not ignored. Finn developed a technique called extended inquiry (EI), which accommodates and mines the unique responses and behaviors of the client to understand their important meaning, and ideally to demonstrate some of that understanding to the client experientially.

When the testing is largely complete and answers to the questions are clarifying, an assessment intervention session (AIS) is planned and executed. This is a critical step Finn devised to help the client see behavior patterns that cause problems in their life and are at the root of answers to their questions. Its purpose is to expand the client's understanding (in both right and left brain) so that they can incorporate previously inaccessible answers in the following feedback session, which is the next session in the typical TA assessment process. In TA this session is called the summary discussion session to connote the collaborative nature of this approach. Answers to questions are discussed following guidelines derived from social psychology research to maximize the effect the results can have. After this final session, a personal letter is written (rather than an impersonal assessment report) outlining the assessment results while incorporating the client's examples, metaphors and images that are meaningful to them and contextualized within the client's life. The last step in the TA process is a follow up session scheduled two or three months after the summary discussion session to allow further discussion of the results, trouble shooting remaining difficulties, and to address any additional questions that have come up

as a result of the client becoming unstuck. For a more complete introduction to TA see Finn & Martin (2013).

The Therapeutic Value of Projective/ Performance-based Techniques:

There are two places in this process in which projective/performance-based measures are instrumental in activating an experience in the client and thus providing important information to the assessor and opening the client to new insights: extended inquiry opportunities (EI) and the assessment intervention session (AIS). Both rely on the power of a stimulus to trigger the kinds of projections that are observed in the fMRI studies mentioned above. The EI happens spontaneously while the AIS is carefully planned to activate an emotional response that is key to the client's questions.

The AIS involves using a testing measure to activate a response in the room that can then be addressed collaboratively in the moment. This is a critical step in the process, and it often relies on a projective technique to do what fMRI studies suggest—to access reactions that are otherwise hidden from the client (and consequently from self-report data) but which fuel problematic behavior. For problems with emotions or relationships, the Thematic Apperception Test (TAT; Murray, 1943) is often employed because the stimulus of certain pictures (thoughtfully selected) invariably trigger projections that reveals underlying patterns of behavior that are not apparent to the client.

The alert assessor, who by this time has become a trusted collaborator, can supportively and gradually focus the client's attention on critical problematic reactions. The client and assessor by now have a body of evidence (both from the testing results and their interactions together) to draw upon in the effort to help the client see and understand a key something she/he has never effectively understood before. Because this is an experiential exploration, the insight is particularly powerful and disruptive of blind habits. New reactions that are more adaptive than these habits can then be explored with the assessor's help and tried out first in the room (e.g., by telling a different but viable story) and then outside the room in a way the assessor and client devise for the following week. The AIS can be a powerful agent of enduring change. For a case illustrations see Martin (2016).

Summary:

Thus, it seems important aspects of psychological assessment have been lost in the bustle to make psychological interventions quicker, more efficient, and less costly. A major casualty of this trend is that projective/performance-based tests are increasingly not used or even taught in training programs. While this makes psychological assessment less time intensive, it sacrifices at least two vital functions: accessing important information that only projective/performance-based tests can provide and which is often critical to successful treatment, and creating the opportunity for clients to see central aspects of their problems in living with new eyes and in potentially life-changing ways.

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Zulliger, Wartegg and Personality Research Form (PRF) Tests as Predictors of Investment Performance

Joachim von Weissenberg

This article explores the utility, validity and reliability of three psychological tests in predicting fund managers investment performance. Two of the psychological tests-the Zulliger and Wartegg tests-represented implicit psychological motives. The third test-the Personality Research Form (PRF)-represented explicit psychological motives. Investment performance was measured by analyzing the five-year risk adjusted performance of forty professional fund managers in Finland. The finding of the present work was that the Zulliger Test predicted 45.4 %, the PRF predicted 25.4 % and the Wartegg Test predicted 8.3 % of the investment performance. The combined three-test prediction percentage of investment performance was 55.0 %. One of conclusions of this study is that implicit motives have been neglected in behavioral finance research.

Different types of funds, managed by professional fund companies, continue to increase their global importance as investment and savings tools (Icifactbook, 2015). Consequently, the profession of fund managers has become highly influential. However, the personality features of fund managers have scarcely been studied. Research in individual differences has slightly different meanings depending upon the basis of the question and the scientific tradition of the study. Studying individual differences in the financial area have been an interest for behavioral finance which is a diversified scientific area. Many traditions are relevant within the field of behavioral finance (Shiller, 2000, 2005), such as economics, psychology, sociology, social psychology, media research and anthropology. The present study represents a psychometric tradition, which stresses clearly defined and quantitatively measurable personality variables.

The personality traits of fund managers have been studied in relationship to aspects of risk taking, trading activity and investment performance (Keller & Siegrist, 2006; Odean, 1998; Sages & Grable, 2010). Most studies that have examined individual differences do not include any real trading performance measurements and most performance studies do not take into consideration individual psychological differences. Moreover, there are very few studies that combine standardized psychological methods with field performance measurements. The only study that fulfils these robust criteria of explicit psychological motives and real investment performance is that of Durand, Newby, and Sanghani (2008), which examined 18 investors with 'Big Five' traits, psychological gender and Jackson's preference for innovation and the propensity for taking risks in relation to one-year investment performance. The authors of this study concluded that negative emotion and a propensity for risk-taking were connected to increased trading volume. They also found that increased performance was helped by extroversion and a high preference for innovation, whereas those who scored high on measurements of masculinity tended to have a lower level of performance. Durand et al. (2008) concluded that personality is associated with investment choices: better performance was associated with those with a high propensity for risk-taking and a preference for innovation and negative emotions.

To my knowledge, no study has been performed concerning implicit variables that predict real investment performance. In a related study, however, Sahi, Arora, and Dhameja (2013) did carry out in-depth and semi-structured interviews in order to reveal investor beliefs and preferences. The authors'

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found that affective influence and emotions, or, in other words “when the emotional impact of a decision is very strong, it overpowers the cognition and results in decisions made from an affective point of view”. (Sahi et al., 2013, p. 101). They also discerned the importance of informational processing strategies and perceptual organization principles, meaning that people use heuristics and are biased in their beliefs when they process information. Sahi et al. concluded that psychological motives, such as fear, greed, security, conformity and safety, influence the decision choices that suit individual motives.

Tuckett (2011) interviewed 52 money managers and analyzed their motives from a psychoanalytic viewpoint. He found that markets and their subjects easily change from a sense of reality towards a divided state. A divided state means that risk, which usually evokes anxiety because its outcome is uncertain and involves potential loss, is separated from potential profits. This risk then becomes mentally unconscious and a profit story is sold to clients in a conscious, seductive manner about a phantastic object.In descending markets, the situation is the opposite: profit opportunities become unconscious and people are overly conscious of not losing even more (von Weissenberg, 2017a).These conflicts are permanent and lead to increased emotionality at the expense of thinking and contemplation (Nofsinger, 2005).

The performance of a fund is usually reported in one, three and five-year intervals. A practical problem arises from the fact that people generally buy new fund shares based on one-year measurement reports. However, according to several researchers this is not a reliable measure owing to its short time span (Shiller, 2000, 2005). According to their view, reliability is enhanced if the evaluation period is extended to three and preferably five years (Lakonishok, Shleifer & Vishny, 1994; Shefrin, 2000; von Weissenberg, *in press*).

The purpose of the present study is to explore the utility, predictive validity and reliability of two implicit personality tests-the Zulliger and Wartegg tests and one explicit personality test-the Personality Research Form (PRF)-in relation to investment performance. Predictive validity will be measured in relation to five-year risk-adjusted professional fund performance. The nature of the present study was mainly exploratory concerning both the psychological tests as well as their single variables.

Method:

Participants:

Forty-five Finnish fund managers initially underwent the test battery. Forty individuals were accepted for the final analysis. The most important criterion for inclusion in the study was that participants had overseen the management of the fund for one year prior to the beginning of the comparison period . Another critical aspect was that the fund manager had to be responsible for the trading decisions related to at least one fund and that the fund was officially listed.

Reasons for non-acceptance of participants (n = 5) included a lack of officially-listed fund data, an insufficient management period (less than a year) and an inadequate proportion of decision making (< 40 %) vis-à-vis the fund’s order decisions. The fund managers represented 18 different fund companies. The performance of 82 funds was included in the final count. Of the fund managers included in the final analysis 12.5% were women (5/40) and the estimated mean age of the fund managers was 40. Furthermore, 92.5 % indicated that they had a higher university degree (master’s level) and 7.5 % had studied subjects other than economics. What is more, a quarter of the participants had some further training within the field of investment. The mean length of overall experience within investment was 15.89 years (SD 6.37). The mean professional length of experience was 11.8 years (SD 5.11). For a more detailed method descriptions see von Weissenberg (*in press*).

Procedures:

The test battery consisted of three psychological test methods Zulliger (Uhinki, 1994), Wartegg (Gardziella, 1985) and PRF (Jackson, 1997). The test battery was pre-tested on two separate occasions and with separate professional investors. Feedback was received on each occasion and test procedures were revised accordingly. The fund managers were contacted by mail, e-mail and/or telephone. The fund managers had the possibility to receive personal feedback regarding the test results as a 'reward' for their effort. The data collection followed a strict procedure and was executed before the end of the deadline of the performance period (March 2005), mainly during 2004. Participants were made aware of the purpose of this study and a general instruction was read to them. Furthermore, at the beginning of each test a method-specific instruction was read out to the subjects. The same procedures could be used in single and multi-subject situations. A more detailed description concerning the test instructions and procedures is provided below.

Measures:

PRF Test: Standard and normalized procedures exist in PRF scoring (Jackson, 1997). Interpretation templates are used to make the procedure easier and there is no room for human interpretation in transforming the answers into normative results on the different scales. In the present study, the method-specific instruction was always read to the subjects and the same instruction was also written on the first page of the questionnaire sheet. The scoring followed standard procedures and the interpretation was executed as per the norms set by Jackson (1997) in regard to the Finnish version of the PRF-Form E. The test was performed by an independent and experienced scorer at the Espoo Employment Office.

Zulliger Test: During the actual test, the amount of subjects varied from between 1 and 5 individuals. The Group Method[2] was applied in a similar way, as suggested by Uhinki (1994). In this way, negative effects are minimized between the differences in individual/group procedures. All inquiries were conducted individually after the subjects had written their answers.

Wartegg Test: Several researchers and practitioners (Gardziella, 1985; Wass & Mattlar, 2000) have recommended using two separate Wartegg sheets for each subject to draw on. The first sheet is thought to represent the everyday level of functioning, whilst the second sheet, which is given right after the first sheet has been completed, is thought to represent a deeper level that occurs in pressurized situations. The test administrator provided verbal instructions, which were also printed on the actual test sheet. The two test sheets were identical.

Fund Performance:

In the present study, the information about the fund(s) managed by a fund manager was collected by an impartial company (Eufex Ltd., a Finnish equivalent to Morningstar). This company delivered risk-adjusted Z scores (Sharpe[3]), which were calculated by using the following formula:

Eufex efficiency = (Fund Sharpe measure – MEAN (Sharpe measure)) / MEAN STANDARD DEVIATION (Sharpe measure).

Performance evaluation began in March 2000 and ended in March 2005. This five-year period was divided into a descending market of 31 months from March 2000 until October 2002 and a rising market of 29 months from October 2002 until March 2005 (Standard & Poor's 500, S&P 500).

Validity and Reliability:

The PRF was originally developed by Daniel N. Jackson in 1967. It measured twenty variables of needs as well as two controlled variables: infrequent response and social desirability. Many validation studies have been carried out concerning the PRF and it has been found to meet the criteria of a robust

instrument (Helmes & Jackson, 1977; Mayes & Ganster, 1983; Stricker 1974).

In the current study, the Finnish version of the PRF-E was utilized, which was developed in 1999 by Petteri Niitamo at the Institute of Occupational Health (Jackson, 1997). The Finnish version of the test is a revised version of the PRF-E, which ended up with sixteen variables, including a check-up variable based on desirability. Two completely new variables (guilt feelings and anxiety) and one new factor (feelings of uncertainty) were added in order to broaden the scope of the test for the purposes of clinical use. The test-re-test reliability of the variables was between .66-.89 (Jackson, 1997), which had a better correspondence than the figures reported in the original English version. The validity of the test was examined through the desirability scale, life values, methods of activity and problem-solving methods used at the Institute of Occupational Health, as well as interviews, coping mechanisms and other personality dimensions (validated questionnaires) (Jackson, 1997).

The Wartegg Completion Test was chosen as part of the test battery for two main reasons. First, to collect more information about implicit motives. Second, to receive more knowledge about the scientific use of the Wartegg Test. The Wartegg Test is relatively efficient in terms of time consumption and it is an ideal tool for confirming hypotheses made in interview situations, thereby bringing more objectivity to a highly subjective situation. In his study, Gardziella (1969) concluded that the Wartegg Test had a total validity correlation of 0.52, as well as a correlation to school success of 0.42, whilst the Rorschach and Zulliger tests had a correlation of 0.42. In their meta-analysis review, Soilevuo-Grønnerød & Grønnerød (2012) found that the Wartegg Test had an average inter-scorer reliability rate of r = 0.74, and a validity for studies with a clear hypothesis rate of r = 0.33.

The scoring and interpretation of the test are closely interconnected. The test has traditionally been analyzed according to two interpretive schools: analytical (Kinget 1952; Takala 1953, 1964) and dynamic (Gardziella, 1985; Crisi, 1998; Wass & Mattlar, 2000). In the latter school, the original signs and the completed drawings are comprehended symbolically (Gardziella, 1985). In the present survey the dynamic method based on Manfred Gardziella's (1985) approach was used.

In regard to the Zulliger Test, the present study drew on the Finnish workbook by Ailo Uhinki (1994). An experienced CS scorer undertook the scoring of the protocols using principles formulated by Exner (2000) and the Zulliger Interest Group (Mattlar et al., 1993). A total amount of 75 variables were included. Mattlar, Sandahl, Lindberg, Lehtinen, Carlsson, Vesala et al. (1990) found a high structural resemblance (p. 26) between the Rorschach and Zulliger tests when applying the Comprehensive System. They concluded that this is important since it seems to justify the use of Rorschach research when interpreting the Zulliger protocols (p. 26). Gardziella (1969) found that the validity for the Zulliger Test when selecting students for an industrial vocational school was 0.42. In his review of research concerning inter scorer reliability, Mattlar (2005) found that the results of the Comprehensive System (in the Rorschach Test) were between 0.85 and 0.94. Wood, Nezworski & Stejskal (1996) claim that all inter-rated percentage data increased in a spurious manner, particularly regarding infrequent variables.

Results:

The inter-scorer analysis was performed for the Zulliger and Wartegg tests. An experienced CS tester was used for the Zulliger Test, which resulted in a score of 10/40 protocols. The mean inter-scorer reliability correlation was r = .665[4], SD = .046. The results of the Zulliger Test variables, based on inter-scorer reliability, for the present study is presented in Table 1. In his review of research concerning inter-scorer reliability, Mattlar (2005) found that the results

of the Rorschach Comprehensive System were between r = .85 – .94, while Viglione, Blume-Marcovici, Miller, Giromini, and Meyer (2012) found a mean inter-rate correlation of .88 for the Rorschach Performance Assessment System.

The inter-scorer reliability for the Zulliger Test is shown in Table 1. The same numbers of participants (10/40) were used for the Wartegg Test and were scored by an impartial and experienced psychologist in order to monitor the inter-scorer reliability. The mean inter-scorer reliability correlation (Pearson/ Spearman) between all the variables was r = .586, SD= .036. The results of the Wartegg Test variables in relation to inter-scorer reliability of the present study is presented in Table 2.

Inter-scorer reliability for the Wartegg Test is shown in Table 2. The five-year performance evaluation began in March 2000 and ended in March 2005. There was a bear market and a bull market within the five-year performance period (Shiller, 2005), which made the performance variable more realistic and reliable.

Two types of statistical analysis were conducted in order to evaluate the relationship between the three psychological tests (Zulliger, PRF and Wartegg) and five-year professional fund performance. The correlation analyses are shown in Table 3 and the regression analyses are shown in tables 4 and 5. The psychological method that showed the most significant correlations and had the highest predictive value was the Zulliger Test, followed by the PRF and the Wartegg Test, respectively. The significant correlations of the Zulliger, PRF and Wartegg tests is reported in Table 3.

Table 1: Zulliger Interscorer[1] Correlations

Zulliger variables		Zulliger variables continue	
R	.981**	W:Dd+D	.997**
L	.642*	W:M	.987**
EA	.897**	DQ+	.826**
eb	.586+	DQv	.283[2]
es	.311	DQv/+	na
FM	.1412	EA-esD	.605+
C'	.5802	COP	.448
T	na	AG	.733+[3]
a	na	H:(H)+Hd+(Hd)	.659*
m	-.5002	H	.943**
V	na	3r+(2)/R	.777**
Y	.694*	Fr+rF	1.000**
M	.784**	FD	na
SumC	.963**	An+Xy	.882**
a:p	.599+	MOR	-.061[2]
Ma:Mp	.635*	Isolate R	.832**
2AbArtAy	.646*	Riskfactor	.962**
FC:CF+C	.627+	SumM:WSumC	1.000**
S	.848**	zf	.471
Afr	.951**	Zsum	.522
Blend:R	.752*	Adjes	.192
P	.362	Adj D	.446
X+%	.944**	XA%	.846**
X-	.934**	WDA%	.717*
SumFQ+FQo: SumFQuFQ-	.894*	Xu%sum	.900**
Mean all Variable	.665	-	
SD	.046	-	

Note.[1] n = 10. na = not available, [2] The measurement was from n = 7 (10) due to 0-0 values. See Mattlar (2005. p. 11-12). [3] The measurement was from n = 6 (10) due to 0-0 values. See Mattlar (2005. p. 11-12). + p< .10. * p< .05. **p<.01. *** p< .001.

Table-2: Wartegg Interscorer[1] Correlations

Test Variables		Test Variables (continuation)	
Work time (speed)	.778**	Working aggressivity	.532
Work standard	.404	Aggressivity in thoughts	.773*
Work efficiency	.702*	Handling of borders	.666*
Carefulness of work	.574+	Handling of borders in relationship to humans	.590+
Work objectivity in objective situations, surface	.479	Square1sum	.391
Work objectivity in objective situations, depth	.430	Square2sum	.606+
Work objectivity in emotional and social situations, surface	.510	Square3sum	.387

Work objectivity in emotional and social situations, depth	.635*	Square4sum	.511
Taking facts into consideration	.688*	Square5sum	.335
Stimulus dependence, sq 7	.914*	Square6sum	.792**
Work authenticity	.577+	Square7sum	.485
Ambition	.947**	Square8sum	.200
Working under pressure (Anxiety)	.277	First Wartegg sheet sum	.597+
Working under pressure, (Anxiety) shadowing	.206	Second Wartegg sheet sum	.343
Relationship to obstacles and ambivalence	.978**	Efficiency	.636*
Economy of performance	.934**	Handling pressure	.861**
Work liberty	.357	Pathology	.773**
Cautious drawing line	na	Quality of squares (sum)	.841**
Mean all Variable	.586	-	
SD	.036	-	
Note. [1] n = 10. na = not available.+ p < .10. * p< .05. **p<.01. *** p< .001.			

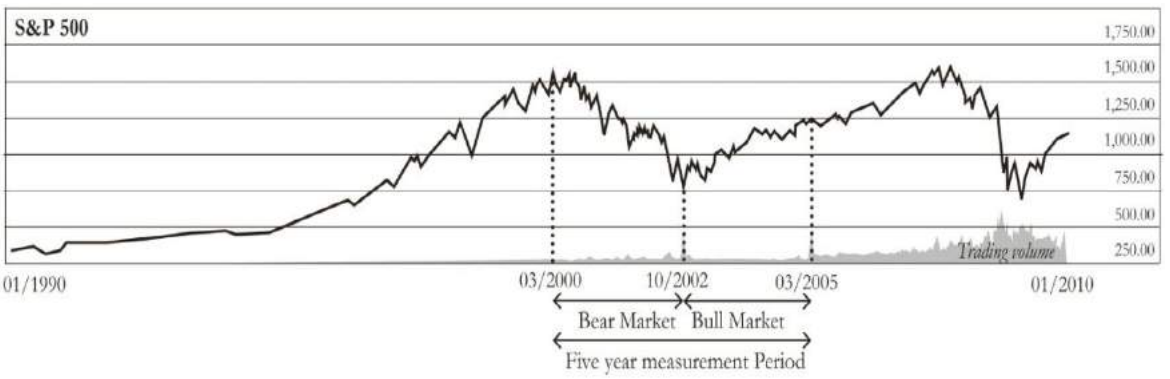

Figure 1. S&P 500 index, the five-year measurement period from March 2000 to March 2005, including bear and bull markets.

Table-3: Significant Correlations between Zulliger, PRF and Wartegg and Five Year Investment Performance	
Test Method	**Five-year Fund Performance**
Zulliger	
Processing efficiency (Zd, Zsum-Zest)	.419**
Introtensive-not[1] (EB-binary)	.377*
Concern (Y)	.368*
Developmental quality (DQ)	.349*
Originality (FQu/R %)	.315*
Stereotypical thinking (P)	-.309+
Human interest (PureH)	.301+
Attention efficiency(Zsum)	.293+
Tested Zulliger variables	
Attention to detail[1] (D+Dd)	-.344*
Ambition whole[1] (W:D)	.339*

Capacity to wait[1] (Mp or not, binary)	.324*
Activity[1] (Ma+Fa+ma)	.320*
PRF	
Extrovert Ambition (do+ex[2]+ac)	-.485**
Dominance (do)	-.386*
Achievement (ac)	-.378*
Order (or)	-.374*
Cognitive Structure (cs+or+im[3])	-.311+
Harm avoidance (ha)	.301+
Cognitive structure (cs)	-.283+
Wartegg	
Relationship to obstacles and ambivalence	.278+
Note. [1] = Not a standard CS variable that has been explored in the present study, [2] = Exhibition, [3] = Impulsivity + p< .10. * p< .05. **p<.01. *** p< .001.	

The significant correlations of the Zulliger, PRF and Wartegg tests in relation to five-year fund performance is shown in Table 3. A total of 13 Zulliger variables correlated significantly or displayed a tendency to significance in relation to investment performance. Five of these twelve variables were not standard Comprehensive System variables, but were instead based on variables tested in the present study. The five variables tested in this study were as follows: introtensive-not (EB-binary), attention to detail (D+Dd), ambition whole (W:D), capacity to wait (Mp or not, binary) and activity (Ma+Fa+ma). These variables will be further elaborated upon in the discussion section of the present article. The PRF showed seven significant correlations to fund performance. There was some slight overlapping when the two composite variables-extrovert ambition and cognitive structure—had two of their three variables (as reported in Table 3) as single variables. Three of the PRF variables only showed a tendency to significance. The Wartegg Test did not show any significant correlations. The relationship to obstacles variable and the ambivalence variable were the only ones that showed a tendency to significance in the Wartegg Test. These results will be further elaborated upon in the discussion.

The results of the regression analysis of the Zulliger, PRF and Waretgg tests are reported in Table 4. In Table 4, the single variables of each method and the predictive value of the whole method are presented. The conjoint predictive validity of the three methods is presented in Table 5. The single tests regression analysis followed the same pattern as the correlation analysis.

The Predictive power of the Zulliger, PRF and Wartegg tests concerning five-year fund performance is shown in Table 4. All three methods displayed significant predictive investment performance. However, there was a relatively clear difference between the predictive power and the three methods. The Zulliger Test predicted investment performance with a highest value of Adj-R2= .454, p< .000. The second most powerful predictor was the PRF test. PRF predicted fund performance of Adj-R2= .254, p< .01. The Wartegg Test had the lowest predictive value of the three methods. This test predicted a fund performance of Adj-R2= .083, p< .05. The conjoint predictive power of the three tests is presented in Table 5.

The conjoint predictive power of Zulliger, PRF and Wartegg tests concerning five-year fund performance is shown in Table 5. As indicated, it is the conjoint predictive power of Zulliger, PRF and Warteggwhich was as high as Adj-R^2= .550, p< .001.

Table-4: Zulliger, PRF and Warttegg Tests as Predictors of Five-year Investment Performance

Variable	B	SE B	β	Adj. R^2	Final B	Model SE B	β	Adj. R^2
Zulliger								.454***
Stereotypical thinking (P)	-.033	.016	-.309	.072+	-.062	.014	-.589*	
Human interest (PureH)	.410	.192	.328	.084*	.418	.173	.335*	
Originality (Fqu/R)	.004	.002	.315	.062+	.004	.002	.326*	
Cognitive flexibility vs. rigidity (a:p)	.211	.200	.169	.003	.399	.160	.318*	
Attention efficiency (Zsum)	.005	.003	.293	.062+	.005	.003	.258+	
PRF								.254**
Order (Or)	-.066	.026	-.374	.117**	-.061	.025	.349*	
Extrovert Ambition[1] (Do+Ex+Ac)	-.072	.026	-.412	.148**	-.048	.026	-.272+	
Harm avoidance (Ha)	.050	.027	.285	.057+	.042	.026	.241	
Wartegg								.083*
Relationship to obstacles and ambivalence (sq. 5)	.037	.017	.327	.083*				

Note. [1] = Do = Dominance, Ex = Exhibition, Ac = Achievement. + p< .10. * p< .05. **p<.01. *** p< .001.

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Table-5: Regression Model Predicting Five-year Investment Performance with Zulliger, Wartegg and PRF Tests

Variable	**B**	**SE B**	β	**Adj. R^2**
Total Model				.550***
Zulliger				
Stereotypical thinking (P)	-.057	.013	-.544***	
Human interest (PureH)	.425	.157	.340*	
Originality (Fqu/R)	.004	.001	.289*	
Cognitive flexibility vs. rigidity (a:p)	.329	.147	.262*	
Attention efficiency (Zsum)	.005	.002	.252+	
PRF				
Extrovert Ambition[1] (Do+Ex+Ac)	-.034	.012	-.315**	

Note. [1] = Do = Dominance, Ex = Exhibition, Ac = Achievement. +p< .10. *p< .05. **p < .01. ***p< .001.

Discussion:

This study sought to evaluate the utility of the Zulliger, Wartegg and PRF tests in predicting investment performance. The incremental validity and inter-scorer reliability of the Zulliger and Wartegg tests were also studied. The overall predictive effectiveness of the Zulliger Test was high, whereas the PRF was modest and the Wartegg Test was low. The combination of methods yielded the best overall prediction value. The conjoint use of implicit (Zulliger) and explicit (PRF) methods resulted in a prediction of 55 % for professional fund investor performance. This was more than the single use of the Zulliger Test (45.4 %) and the PRF test (25.4%). The Wartegg Test predicted 8.3 % of investor performance. The results from the correlation and regression analyses could be judged as being high if one compares this to the general level of correlations in psychological studies. Meyer et al. (2001, p. 134) compared results from studies within the medical sphere to other applied sciences, and concluded how challenging it is to achieve correlations that are much higher than .30. The usefulness of combining explicit and implicit methods has been well documented in assessment psychology (Hartmann & Grønnerød, 2009; McClelland, 1987; Niitamo, 1999). This can be understood as a more efficient way of capturing a wider scope of human motives: both implicit and explicit (Bornstein, 1999).

The incremental validity of the Zulliger and PRF tests was high. Earlier studies of 18 investors, utilizing the Big Five Method, achieved a prediction value of 31.72 % (Durand et al., 2008). Use of the same

method on 115 students achieved a prediction value of 1.4 % (Durand et al., 2013). The utility of the length of the performance period in the present study was high if compared to Durand, who reported the performance over a period of two months (2013) and one month (2008) (Sharpe ratio). Reporting short performance periods can be misleading considering the general volatility and unpredictability of financial markets (Shiller, 2000; 2005). It is a common observation that markets are sentiment driven, even over longer periods, such as years (Campbell & Shiller, 1998). Consequently, there is considerable danger that people taking either too much or too little risk are evaluated as being too un/successful when adopting such a short evaluation period. This leads to the risk of assessing incorrect personality features as being beneficial in relation to investment performance. With this in mind, the evaluation of personality features should include sufficiently long analyses of ascending and descending market periods.

The Zulliger Test is a little-known method in assessment psychology. The benefit of the method is its time-efficiency in relation to the full Rorschach Test. It has been shown that the CS can be used as an interpretative tool concerning the Zulliger Test (Mahmood, 1990; Mattlar, 1986; Mattlar, et al., 1993; Uhinki, 1994). The majority of the variables that significantly correlate in the Zulliger Test (Table 3) belonged to the cognitive triad category (Exner, 1991). Ten of the twelve variables either directly or indirectly belonged to either the information processing, mediation or ideation categories. This result shows the importance of cognitive processing in investment performance. On the one hand, the correlation results (Table 3) reveal the importance of paying attention to detail (Zsum, Zd). However, on the other hand, the results show that investment performance is not enhanced if detail-orientation dominates (D+Dd), but instead have a focus on the bigger picture (W:D). An interesting result is also the simultaneous need for both an active responsible attitude (Ma+FA+ma) to decision making and the capacity to wait (Mp). This result can be interpreted as the need for individuals to actively process both the market and equities, whilst also valuing the need not to overreact too easily (higher scores on Mp) to market news because every trade involves costs. The activity (Ma+Fa+ma) variable originally formed part of a prognostic scale that was used to predict the outcomes of psychotherapy by Klopfer (Meyer & Handler,1997). The Prognostic scale was meant to test ego strength and certain features, such as reality testing and mastery of reality situations (Meyer & Handler, 1997). Activity is a component of responsible decision-making (Exner, 2000). Moreover, financial decision-making is tightly connected to both reality testing and mastery of reality situations. Stereotypical thinking (P) and its opposite, Originality (FQu%), are features tightly connected to investor performance. Those who are able to think independently and outside the box have greater success in finding under-valued equities and can more easily go against the crowd. This supports findings by von Weissenberg (2017b), who concluded that fund manager underperformance and conformity increases in more stressful working conditions.

Five out of six variables from the final regression analysis were from the Zulliger Test, which shows the utility of the method. This gives support to the conclusions of McClelland, Koestner & Weinberger, (1989), who state that implicit motives appear to be better at predicting behavioral trends over time, as well as to the strong predictive power of Rorschach types methods (Bornstein, 2012; Hartmann & Grønnerød, 2009). The Introtensive-not variable of the present study showed the benefit of being introtensive in making financial decisions. The not group consisted of the extratensives and the ambitents. This result is logical when financial decisions are complex and errors can be expensive (at least in trading costs).

In studies of explicit motives, the Personality Research Form is not as widely used in scientific studies as, for example, the Big Five.

The PRF was chosen as part of the present study because of its benefits from practical experience and its shared scientific background with the other methods. The variables showing a significant correlation with investment performance mainly belonged to two composite groups: extrovert ambition and cognitive structure. This supports earlier findings regarding underperformers being either overconfident risk-seekers (extrovert ambition) or conscientious risk avoiders (cognitive structure) (Lauriola & Levin, 2001; Menkhoff, Schmidt, & Brozynski, 2006; Törngren, & Montgomery, 2004). The conclusion to be drawn is that a risk-seeking or risk-averse attitude, anchored in personality features, is not the optimal way to judge financial reality. However, conjoint regression analysis shows the increased predictive power of utilizing both implicit and explicit methods. This supports earlier findings that highlight the advantage of using both implicit and explicit methods (Hartmann & Grønnerød, 2009; McClelland, 1987; Niitamo, 1999).

The Wartegg Test was chosen as part of the present study for two major reasons. First, it was deemed useful to utilize a second implicit method besides the Zulliger Test. Secondly, the test was deemed most suitable given the relatively scant overall scientific use of the method. The lack of a proper standardized scoring and interpretation system was both an obstacle and a motivator in terms of the decision to use the Wartegg Test as part of the test battery. The correlation and regression results reported in the present study were meager in relation to the two other methods. This might be attributed to the lack of a universally supported standardized scoring and interpretation methodology. How could one then understand that the only variable that showed a predictive power of investment performance was the relationship of obstacles and ambivalence? The variable is related to enduring uncertainty and the simultaneous occurrence of diverging emotions. This feature is important in both mental processing and in the capacity not to act on impulses. Furthermore, this result is connected to stress tolerance (Zvolensky, Bernstein, & Vujanovic, 2011), which is crucial in hectic investment milieus. These results support findings by von Weissenberg (2017b), who discerned that stress in descending markets, in larger and more socially dense open offices, did substantially impair investment performance.

Conclusions and Limitations:

Although the present study was limited in terms of the number of psychological test methods included, it does support the earlier findings that showed that Rorschach type methods were superior predictors of behavior in relation to other methods (Bornstein 2012; Hartmann & Grønnerød, 2009; Mattlar; 2004: Meyer & Handler, 1997). The present study also indirectly supports findings related to the congruence of the Rorschach and Zulliger tests (Mahmood, 1990; Mattlar, 1986; Mattlar, et al., 1993; Uhinki, 1994). The Zulliger Test is a legitimate alternative for scientists and practitioners who experience problems with the time-consuming Rorschach method.

The predictive power of the Wartegg Test was low. The main problem related to this test could be that the interpretation and scoring system needs improvement. The good experience gained from practical use of the Wartegg Test (Gardziella, 1985) gave reason to believe that a more scientific use could be found with the appropriate standardized methodology. The theory advocated by Bion could be one possible direction in terms of finding a suitable theoretical framework, especially for clinical research.

The present study can potentially help both practitioners and researchers find better tools to assess suitable professional candidates for the demanding work of investing financial resources. A profession that dictates the fortune of the world (Icifactbook, 2015).

The limitations of the present study concern the ethnic and cultural homogeneity of the subjects. All the subjects were from one city in one fairly small country. The amount of subjects could also be higher, which was not

possible under the circumstances of the present study. An international study, for example, would make the results more reliable and robust. However, the performance variable represented both national and internationally-listed forms of equity. Further research is needed to provide more evidence that affirms that the variables used in the present study are able to predict strong performance. Fund managers are a group of subjects especially suitable for performance studies, due to their internally comparable performance. However, the willingness of professional investors to participate in self-revealing tests is another question. Future research is needed concerning the Zulliger and Wartegg tests, in particular, in order to promote projective methods and their role among both practitioners and scientists (see Piotrowski, 2015).

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[1] The comparison period lasted from March 2000 to March 2005.

[2]. Many researchers have concluded that group and individual testing are different procedures that yield different results (Lis & Rossi, 1995; Mattlar, 1986). Mattlar (1986) and Ritzler and Nalesnik (1990) concluded that the biggest reason for these different results is probably due to the lack of (proper) inquiry in the group version. The major differences between the group and individual procedures were that printed blots were used instead of slides projected onto a screen, as well as the latter category providing no instructions or remarks regarding the different time limitations about producing more than one answer (Ritzler & Nalesnik, 1990). These were critical questions in regard to planning the procedure for this particular study, as the setting in which the subjects were to be tested was not known in advance.

[3]. The Sharpe Ratio is a measure for calculating risk-adjusted return, and this ratio has become the industry standard for such calculations… The Sharpe ratio is the average return earned in excess of the risk-free rate per unit of volatility or total risk... Generally, the greater the value of the Sharpe ratio, the more attractive the risk-adjusted return'. (Investopedia, 2015)

[4]. The figure was only calculated for occurrences. If the 0 occurrences were more than 20%, they were not used because the figure would rise substantially. If the data consisted of several 0 occurrences, the correlation coefficient rose without any substantive reason (Mattlar, 2005)

Assessment Practices of Psychologists in the Mental Health System in Bolivia

Marion K. Schulmeyer and Chris Piotrowski

While copious survey-based data on test usage worldwide have been published, there is limited research available on assessment practices in mental health settings in South America. To address this gap in the literature the current study focused on psychological testing practices in a sample of psychologists, working in the mental health system, in Bolivia. Based on a structured survey, 44 psychologists were interviewed regarding tests used in the areas of projective, objective (self-report) personality, and behavioral assessment. The top instruments were: Drawing techniques, TAT, Rorschach, MMPI, and Beck Inventories. In addition, there was strong emphasis on assessment using DSM diagnostic criteria. Moreover, our sample felt that these instruments would continue to be popular in the future. These findings corroborate scholarly reports on the continued reliance on both projective and self-report assessment practices worldwide (Piotrowski, 2015). Future studies, across nations in South America, should focus on graduate-level educational and training emphasis in mental health assessment so as to gain a perspective on emerging trends, internationally, in psychological testing.

Historical Context:

Bolivia is a landlocked country in the center of South America with close to 11 million people from 36 different ethnic groups and cultures. Positioning Bolivia in the Latin American context can help us understand the precariousness of its social and economic reality. Bolivia has the second lowest Human Development Index of the 12 South American countries (Bolivia is ranked 119 and Guyana 124), the highest percentage of population living below the income poverty line (45%), and a healthy life expectancy of 54 years (UNDP, 2015, WHO, 2011). The government designates only .2% of the Health Care budget to mental health, that is about 75 000 American dollars annually, much less than the South American average (García, 2011; Jaen-Varas, Silva, Whitfield, & de Jesús, 2014; Rivera, 2015).

The World Health Organization reports that for every 100,000 people, there is 1.06 psychiatrists and 0.46 psychologists, 39 outpatient mental health centers throughout the country and nine psychiatric hospitals (WHO, 2011). Current estimates indicate that there are 117 psychiatrists and 51 psychologists working in the mental health system. Undoubtedly, the field of Psychology is still considered a young profession. Bolivia was the last country in Latin America to establish a Psychology Program at a university; México opened the first program in 1928 and Bolivia in 1971 (Alonso &Eagly, 1997); Chile started the first experimental psychology laboratory in 1908; and Bolivia initiated its first of three existing laboratories in 1975 (Schulmeyer, 2015; Vinet& González, 2013). Psychologists have been trained in Bolivia for 45 years at the Catholic University of La Paz and, around 25 years ago, most of the other psychology programs were established at private and public universities. Currently, there are 26 academic psychology programs throughout Bolivia (Ministerio de Educación, 2012).

Psychological Assessment in Bolivia:

To date, there are no research data on the use and attitudes of mental health practitioners on psychological tests in Bolivia. But, in a recent study on the characteristics of psychological assessment training in undergraduate programs in Bolivian universities, projective tests were found to be more frequently taught than objective tests and only three programs include test theory. Moreover, as a general rule, psychoanalytic theory is prevalent in assessment courses' syllabus and bibliography (see Schulmeyer, 2016).

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In general, psychology programs teach several tests that cover intelligence, child development, professional interests, and personality testing. Among the nine different intelligence tests that are taught, Wechsler Scales (WAIS, WISC, WPPSI), and the Goodenough test are the most popular. The Bender-Gestalt test is widely taught for the assessment of child development, followed by the TEPSI and DENVER tests. Vocational interests are normally tested with Kuder Vocational Preference Record. A couple of courses include at least one of seven objective personality tests (in two of nine programs, the MMPI and 16PF are emphasized). Self-report personality tests are expensive and difficult to obtain; thus, projective tests (HTP, DAP, DAF, and TAT) are the preferred method to analyze elements of personality. Interestingly, the Rorschach has not been emphasized in practice (Schulmeyer, 2014).

Assessment Practices Overseas:

Prior to 2000, periodic reports on test usage in various countries have been published (for review, see Chan & Lee, 1993; Piotrowski, Keller, & Ogawa, 1993; Ogawa & Piotrowski, 1992; Sharpley& Pain, 1988). Muñiz, Prieto, Almeida, and Bartram. (1999), in a study on testing practices in Spain, Portugal, and Latin America, found that the most commonly used tests were: the Wechsler Scales, MMPI, Rorschach, Raven matrices, 16PF, Bender-Gestalt, Human figure drawings, and the TAT. A similar pattern of test usage was reported by Muñiz et al. (2001) in a survey of professional psychologists from 6 European countries. More recently, Evers et al. (2012), based on test use data from 17 European nations, found the following tests most popular: the Wechsler Scales, MMPI, Raven, 16PF, NEO Personality Inventory, Beck Depression Inventory, and SCL-90. In Japan, Ogawa (2010) found continued popularity of projective techniques by psychologists (top ranked were: the Baum Tree Drawing, House-Tree-Person, DAP, and Kinetic Family Drawings). Based on 2013 data from 64 countries, Oakland, Douglas, and Kane (2016) reported on test use with children and youth; the following tests ranked highest: WISC, Raven, WPPSI, Child CBCL, Bender-Gestalt, Apperception tests, Kaufman-ABC, DAP, and Stanford-Binet IQ test.

Several survey-based studies on assessment practices in South America have been reported. Data on test use of faculty at the department of clinical psychology at the University of Sao Paulo, Brazil, indicated that 87% rely on projective techniques, particularly the TAT (see Herzberg &Mattar, 2008 for a review). In another survey of Brazilian psychologists, Oliveira, Noronha, Dantas, and Santarem, (2005) found the TAT, CAT, Bender-Gestalt, Human figure drawings, and Rorschach among the top used tests. More recently, Wechsler et al. (2014), in a study on test use in Argentina and Venezuela, found preference for projective tests, with strong emphasis on the Rorschach.

Method:

Participants:

Based on the 2011 WHO's Report, we estimated around 50 psychologists working in the National Health Care system in Bolivia. We interviewed 44 psychologists that agreed to participate voluntarily in the study. The study was conducted in the five cities that have at least one mental health hospital, and interviewed 10 psychologists in Sucre, 4 in Cochabamba, 11 in Tarija, 12 in Santa Cruz and 7 in La Paz. In each city, psychologists who worked at Mental Health Hospitals were interviewed, including at least two psychologists that worked in the health care system provided by the state.

Survey Instrument:

Structured interviews were conducted based on survey questions, regarding psychodiagnostic test usage, reported in the USA (Piotrowski, 1985; Piotrowski, Sherry, & Keller, 1985; Piotrowski & Zalewski, 1993). The first three questions were open ended, the next three were multiple-choice and a seventh question, aimed to explore the

experience of Bolivian psychologists regarding research on psychological assessment with projective and objective tests, was included.

Results:

1. In your opinion, with what five projective tests should the professional practitioner be competent? (You can mention less than five tests.)

Test	n	%
Draw a Person in theRain	27	61.36
House-Tree - Person	18	40.91
Draw a Family	17	38.64
TAT	17	38.64
Draw a Person	15	34.09
Rorschach	11	25.00
Baum Tree Drawing	10	22.73

Other tests mentioned less frequently were: the Desiderative Test, Children's Apperception Test, Corman's PN Test, Bender Test, Luscher's Color Test, and Philippson's Object Relations Technique. Some psychologists claimed these tests were useful in rapport building with children, in generating less resistance to the testing situation, in corroborating hypotheses that arise in the interview, and easier to use with patients that have little or no schooling, and resistant to faking.

2. In your opinion, with what five objective personality measures should the professional practitioner be competent? (You can mention less than five tests.)

Test	n	%
MMPI	27	61.36
MIPS (Millon)	17	38.64
16 PF Questionnaire	8	18.18

For Bolivian psychologists, objective tests are better known as psychometric tests. When answering this question, respondents normally mentioned the tests they use without taking into consideration whether the instruments were projective, objective or personality tests (they mentioned the Rorschach, the Color Test, other projective tests, and several intelligence tests). Most of the psychologists declared that due to time constraints testing was rather limited, and several stated that many patients didn't understand the tests (they didn't know how to answer an objective test, and the psychologists would need to read the test and fill-in the answers).

The lack of time to conduct a proper diagnostic process was mentioned mostly by psychologists working in general hospitals (not those working in Mental Health Hospitals). This can be understood since there is only one psychologist for 400 beds in some hospitals. The overwhelming patient load and lack of time to provide quality clinical care was the major constraint mentioned by almost all psychologists in public hospitals.

3. In your opinion with what five behavioral measures should the professional practitioner be competent? (You can mention less than five tests.)

Instruments	n	%
DSM	7	15.91
Beck Anxiety Inventory	7	15.91
Beck Depression Inventory	6	13.64

This question was generally misunderstood since behavioral measures are thought of as behaviorist interventions. But in the interviews, it was clearly stated that all psychologists rely on the clinical interview. Psychologists in the mental health hospitals use different tests to confirm their diagnostic hypothesis and to write diagnostic reports, but in general, hospitals clinicians rarely use tests of any kind, and base assessment decisions on the information and clinical self-report data obtained through the clinical interview.

4. Do you see projective personality assessment …..in the near future?

	n	%
Increasing	21	47.73
Remaining the same	10	22.73
Decreasing	13	29.55

Responses were based on personal opinions regarding observations conducted in their daily work. Some of the reasons offered for

the increase of projective assessment were: a) that such tests would increase due to social change, b) that such tests provide detailed information that helps refine differential diagnosis, c) that projective tests tap anxiety and depression states, and salient aspects of personality, and d) that such tests complement clinical observation performed through the diagnostic interview. The reasons respondents gave for projective tests decreasing were the lack of studies on their validity, there lack of clinical usefulness, and that patients already know what to draw.

5. Do you see objective personality assessment ….in the near future?

	n	%
Increasing	21	47.73
Remaining the same	17	38.64
Decreasing	6	13.64

Respondents held the opinion that objective personality assessment would increase since these tests are broadband measures that tap on all types of mental disorders, are mostly standardized, tend to be revised on a regular basis, and because Insurance Companies need to have objective data to make decisions regarding coverage. Finally, some respondents thought these types of tests would decrease since these measures are not applicable to patient populations. Furthermore, cognitive psychologists and psychologists who kept abreast of research believed that objective tests would increase in the future.

6. Do you see behavioral assessment ….in the near future?

	N	%
Increasing	19	43.18
Remaining the same	13	29.55
Decreasing	1	2.27
Didn't answer	11	25.00

There were no useful comments for this question.

7. Have you read research on the use of projective or objective tests done in Bolivia or in another country? If so, did you take into account that information for your own practice?

	N	%
No	21	47.73
Yes	16	36.36
Didn't answer	7	15.91

Psychologists answered the first question. The second question was only mentioned by a couple respondents who indicated that they use test manuals to know how to apply and interpret tests and present case studies. If we take into account the psychologists that didn't answer, probably more than half of the psychologists interviewed tend not to read the research literature on the use of tests. Respondents mentioned lack of time and lack of research that would be useful with the type of population they work with (this was the case of a psychologist that works mostly with children from rural contexts). A majority of the psychologists that do read clinical research mentioned that there are limited research resources available in Bolivia, and that the majority of published research comes from Spain, Argentina, and Chile.

Discussion:

Data obtained from 44 Bolivian psychologists who work in the Mental Health System indicate that they recommend professional competence in the instruments that they have found useful in their work experience. Respondents mentioned 16 different projective tests; the Draw a Person in the Rain was the most popular test, followed by Machover's HTP. Graphic projective tests are widely regarded in Bolivian universities, and since these measures are available at no cost, their popularity is understandable (Schulmeyer, 2014, 2016). The TAT and Rorschach tests were among the five most mentioned, but are not as popular as in other countries (see Piotrowski, 2015a, 2015c; Oliveira et al., 2005; Wechsler et al., 2014). Perhaps this is due to the difficulty in obtaining these instruments and the lack of trained professional mentors in Bolivia.

When asked about objective tests, the MMPI was the most frequently mentioned. However, based on the comments of respondents, the MMPI is possibly used less often than one would believe, based on time constraints of both clinicians and patient interaction time. In addition, several behavioral instruments were mentioned. Based on data from personal interviews with the psychologists, clinicians reported that objective test data were largely used to corroborate impressions obtained from projective assessment. Furthermore, the Beck Inventories (BDI & BAI) seem to be embraced professionally by the respondents in our sample.

When comparing the percentage of psychologists that think projective and objective assessment would increase, we observed no difference (48% think projective testing will increase and 48% think objective testing will increase). However, 30% believe projective assessment will decrease and only 6% believe objective assessment will. These respondents clearly find both types of assessment useful and the reasons they noted for a decrease in projective test use are mostly linked to validity issues. This coincides with critical reviews of the extant research regarding projective techniques (Lilienfeld, Wood, & Garb, 2000; Piotrowski, 2015c).

This study addressed the issue of how research findings affect psychologists' assessment practices. But research in Bolivia has shown that Bolivian professionals still overrate scholarly coverage in books and make little use of modern digital communication technology that would help them access international and national research in order to stay updated on the latest research (Gainsborg, 2013; Sainz, 2009). For this reason, we posed the question on whether psychologists had read research regarding psychological assessment and found, as expected, that most of them had sparse research resources. We find it interesting to note that the psychologists who tried to keep themselves professionally informed and updated showed positive attitudes toward evidence-based assessment in the future.

In conclusion, the current findings attest to the popularity of projective techniques in Bolivia, particular Drawing methods. This corroborates recent studies that confirm use of Drawing techniques in mental health assessment worldwide (see Piotrowski, 2016; Stiles, McElrath, Lucas, Rajan, & Gupta 2015; Woolford, Patterson, Macleod, Hobbs, & Hayne, 2015).

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Personality and Investment Performance: A Financial Risk Attitude, Stress Tolerance and Complex Problem-Solving Perspective

Joachim von Weissenberg

The article presents empirical results of forty fund managers' implicit and explicit motives in relation to five year risk adjusted investment performance. The first step of the study was to create composite variables from three personality tests: Zulliger, Wartegg and Personality Research Form (PRF). Three composite variables were created of the implicit and explicit personality variables: financial risk attitude, stress tolerance and complex problem solving. The finding of the present work was that financial risk attitude, stress tolerance and complex problem solving explained 53.8% of the investors' five year performance. All three composite variables correlated significantly to a five year period consisting of a rising and descending market. The conclusion of the study was that fund managing is suitable for certain personality characters, implicit motives have been neglected in behavioral finance, fund companies should review their assessment procedures and individual thinking and distress management should be fostered to enhance performance.

During the last two decades an increasing amount of attention has been paid within the financial area to individual differences in financial behavior. However, the study of individual differences has different meanings depending upon the basis of the question and the scientific tradition of the study. This is due to the fact that behavioral finance is a multidisciplinary scientific field where many traditions are relevant (Shiller, 2000, 2005), such as economics, psychology, sociology, social psychology, media research and anthropology. Behavioral finance is a diversified scientific area, particularly in terms of conceptuality and methodology. This is seen in studies concerning individual differences in an investment setting, where, for example, some studies draw conclusions about effects of overconfidence based on the mere assumption that everybody is overconfident (Odean, 1998). Other studies, however, define and measure variables concerning individual differences by using standardized psychological methods (Durand, Newby, and Sanghani, 2008; Durand, Newby, Peggs, and Siekierka, 2013); Lauriola and Levin, 2001; Nyhus and Webley, 2001; Soane and Chmiel, 2005). The present study is representative of the psychometric tradition within psychology, which stresses clearly defined and quantitatively measurable personality variables. One can identify two different types of personality variable within personality psychology: implicit motives and explicit traits.

Implicit Motives and Explicit Traits:

Human motives can be divided into two categories: implicit and explicit (Bornstein, 1999; Olson, 2006). In the field of personality psychology explicit motives or traits have traditionally been measured through self-attributed questionnaires, whilst implicit motives or needs have been measured through so called projective techniques (McClelland, 1987). Explicit motives are usually more conscious and implicit motives are more unconscious. McClelland, Koestner and Weinberger (1989) concluded that implicit motives appear to be better at predicting behavioral trends over time, whilst explicit motives appear to be better at predicting immediate choices: "So measures of both types of motives improved prediction of performance over what either predicted alone" (p. 692).

Explicit Motives or Traits:

Explicit motives have been studied in relationship to investment from different

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research problems. The most frequently used method has been to measure personality traits in relationship to aspects of risk taking, trading activity or investment performance.

Risk attitude studies have found that two types of risk attitude exist: risk proneness and risk aversiveness. Those in the category of being risk prone have been reported to be overconfident, whilst those averse to risk have been said to be conscientious (Lauriola and Levin, 2001; Menkhoff, Schmidt, and Brozynski, 2006; Törngren, and Montgomery, 2004). Risk proneness is positively related to the following traits: 1. Disinhibition and susceptibility to boredom (Lauriola and Levin, 2001); 2. Arousal, experience and sensation seeking (Hunter and Kemp, 2004; Wong and Carducci, 1991); and 3.Emotional stability and openness to experience (Lauriola and Levin, 2001). 4. Aggression has been noted to increase risk taking (Kugler, Neeman and Vulkan, 2014; Lerner and Keltner, 2001).

Those categorized as risk aversive have been found to be more conscientious, introverted and anxious. According to Lauriola and Levin (2001), neuroticism and low levels of openness were positively correlated to risk aversive individuals. It has been reported that the risk aversive (conscientious) group has the most stable attitude to risk taking (Soane and Chmiel, 2005). Anxiety has been found to decrease risk taking (Johnson and Tversky, 1983; Kugler et al., 2014).

It has been observed that financial underperformance is related to risk aversion. Underperformance has also been found to correlate to risk proneness if connected to overconfidence (Keller and Siegrist, 2006; Sages and Grable, 2010). Odean (1998) concluded that overconfidence increases trading volume and volatility and can lead to an under reaction to abstract, statistical and highly relevant information. Kogan (2006) observed that trade volume; price errors and volatility are higher when subjects were induced to be overconfident.

Most studies that have examined individual differences do not include any real trading performance measurements and most of the performance studies do not take into consideration individual psychological differences in regard to real trading performance measures. Moreover, there are very few studies that combine standardized psychological methods with field performance measurements. The only study that fulfilled these tight criteria was that of Durand et al. (2008), which examined 18 investors with 'Big Five' traits, psychological gender and Jackson's preference for innovation and the propensity for taking risks in relation to one-year performance. They concluded that negative emotion and a propensity for risk-taking were connected to increased trading volume. They also found that extroversion and a high preference for innovation increased performance, whereas those with a masculine psychology tended to have a lower performance. Durand et al. (2013) utilized the same psychological measurements as Durand et al. (2008) on a sample of 115 students during a two-month analysis of financial game performance. They concluded that personality is associated with investment choices: better performance was associated with those with a high propensity for risk-taking, a preference for innovation and negative emotions.

Implicit Motives:

Sahi, Arora, and Dhameja (2013) carried out in-depth semi-structured interviews in order to reveal investor beliefs and preferences. These were categorized into three classes: 1. Affective influence and emotions, or, in other words when the emotional impact of a decision is very strong, it overpowers the cognition and results in decisions made from an affective point of view. (Sahi et al., 2013, p. 101). 2. Informational processing strategies and perceptual organization principles, meaning that people use heuristics and are biased in their beliefs and when they process information. 3. Psychological motives, such as fear, greed, conformity and safety, impact the decision choices that suit individual motives.

Tuckett (2011) interviewed 52 money managers and analyzed their motives from a

psychoanalytical viewpoint. He found that markets and their subjects easily change from a sense of reality towards a divided state. A divided state means that risk, which usually evokes anxiety because its outcome is uncertain and involves potential loss, is separated from potential profits. This risk then becomes mentally unconscious and a profit story is sold to clients in a conscious, seductive manner about a phantastic object. In descending markets, the situation is the opposite: profit opportunities are separated from consciousness and the market focuses on not losing even more (von Weissenberg, 2017).This brings about 'groupfeel' in the market and among money managers. Tuckett (2011) attests that investments in financial assets evoke ambivalent feelings among investors due to the sense of uncertainty regarding whether they will win or lose. These conflicts are permanent and lead to increased emotionality at the expense of thinking and contemplation (Nofsinger, 2005).

Two different methods were used in the present study in order to measure implicit motives: The Zulliger (Zull) Test (Zulliger, 1969) and the the Wartegg (WZT) Test (Gardziella, 1985). The Zulliger Test was scored using a specially-adapted Comprehensive System (CS) Uhinki, 1994).Criticism against the validity and the norms has risen both within and outside the CS community (Garb, Wood, Lillenfeld and Nezworski, 2005; Mahmood, 1990; Mattlar, 1986; Sandahl, Mattlar, Carlsson, Vesala, and Rosenqvist, 1990; Wood, et al, 1996). The reasons for these critiques are numerous, but they are united on two points: cultural factors and problems related to obtaining a normality result after a Rorschach examination. This critique stems from the same reason: the Comprehensive System norms were collected from white Southeast American college students, and thereby represent healthier and a more educated background than average (Mattlar, 1986, 2005). Wood, Nezworski, and Stejskal (1996) claim that all inter rated percentage data had increased in a spurious manner, particularly regarding infrequent variables. Although this critique was based on wrong conclusions (Mattlar, 2005), the critics seem uninterested in correcting their mistakes. Mattlar (2004a) stated that abandoning the Rorschach and CS test would mean that one is forced to resort to numerous methods in order to fully replace them.

It has to be stated though that the Wartegg test has its own opponents, especially among the scientific community (Tamminen and Lindeman, 2000), where it has been accused of promoting magical thinking. The users of the test have responded to the critique by stating that the Wartegg test is a time efficient and highly informative method (Mattlar, 1999; 2004b). One reason for this conflict can be found in insufficient agreement concerning generally accepted interpretations and scoring practices.

The performance of a fund is usually reported in one, three and five year intervals. A practical problem arises from the fact that people in general buy new fund shares based on one-year measurement reports. However, according to several researchers this is not a reliable measure owing to its short time span (Shiller, 2000, 2005). In their view, reliability is enhanced if the evaluation period is extended to three and preferably five years (Lakonishok, Shleifer, and Vishny, 1994; Shefrin, 2000; von Weissenberg, *in press*).

The purpose of the present work is to study both deeper implicit motives and explicit traits in relation to five-year risk-adjusted fund performance and to explore if composite personality variables do explain investment performance.

Method:

Participants and Testing Procedure:

Forty-five subjects initially underwent the test battery. Of these, forty fund managers were accepted in the final analysis. The only reason for non-acceptance in the final analysis was on the basis of insufficient fund data. The main reasons for insufficient fund data were as follows: 1. A lack of officially-listed fund

management data. 2. An insufficient management period (less than a year), or an inadequate amount of decision-making (< 40%) in relation to decisions concerning the fund's order. The mean fund governing time (a maximum of 60 months) was 52.16 months (four years and four months). The fund managers represented 18 different fund companies. The participants were found by direct contact to the fund managing companies. First a letter with a collegial (a well-known fund manager) recommendation was sent to the head of the fund managing companies. This was followed by a phone call or an e-mail by the author to inquire possible participation in the survey. The researcher went to the fund managing companies and usually tested several fund managers at the same time. This took 1.5-2.5 hours depending on the amount of test done at the same time. Some of the tests (PRF) were possible to do separately and send the results by mail.

The performance of 82 funds was included in the final analyses.Of the participants, 12.5% were women (5/40). The estimated mean age of a fund manager was 40 and 7.7 % (3/39) of managers indicated that they were single. In regard to education, 92.5% indicated that they had a higher university degree (a Master's Degree or higher) and 7.5% had studied subjects other than economics. The mean length of overall experience within investment was 15.89 years (SD = 6.37). The mean professional length of investment experience was 11.8 years (SD = 5.11).

Measures:

Fund Performance:

In the present study the information about the fund(s) managed by a fund manager was collected by an impartial company. Eufex Ltd (a Finnish equivalent to Morningstar) delivered risk-adjusted Z scores (Sharpe), which were calculated by using the following formula:

Eufex efficiency = (Fund Sharpe measure – MEAN (Sharpe measure)) / MEAN SD (Sharpe measure).

Performance evaluation started in March 2000 and ended in March 2005. This five-year period was divided into a descending market of 31 months from March 2000 until October 2002 and a rising market of 29 months from October 2002 until March 2005 (Standard and Poor's 500, SandP 500). There was a bear and bull market within the five year performance period which made the performance variable more realistic and reliable.

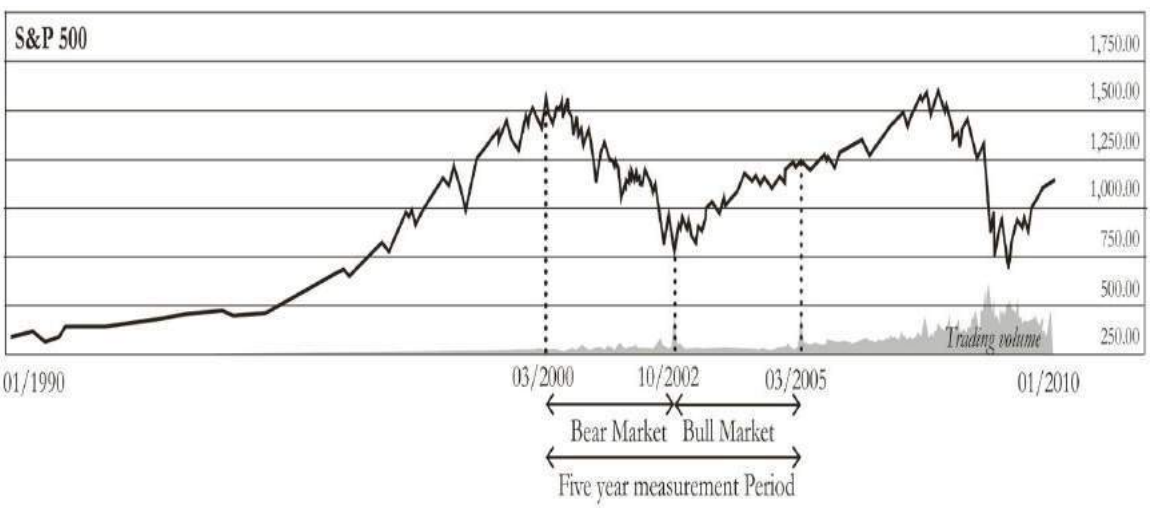

Figure 1.SandP 500 index, the five year measurement period from March 2000 to March 2005, including a Bear and Bull market.

Motives, Measurement, Tests:

Zulliger:

The Zulliger Test (Zulliger, 1969) consists of three ink-blot tables on which a research subject is supposed to make associations. This test utilizes the same procedures and interpretative techniques as the Rorschach test, although it is less time consuming, shorter and it is possible to carry out a group version. The current research project utilized specific Zulliger research knowledge (Uhinki, 1994; Zulliger, 1969), which was based on Exner's (1993, 2000) research on the Rorschach Test. No tests utilizing the Rorschach or Zulliger methods were found concerning fund managers. In his review of research concerning inter-scorer reliability, Mattlar (2005) found that the results of the Rorschach Comprehensive System were between 0.85 – 0.94. The mean inter-scorer, inter reliability correlation for the Zulliger variables in the present study was 0.665, SD = 0.046, (see also von Weissenberg, *in press*).

Wartegg:

In 1939 Ehrig Wartegg formulated a drawing completion test. This test is composed of eight panels, with a different stimuli sign in each, and a participant is instructed to complete a drawing whilst taking into account this sign. Wartegg constructed a way to interpret mainly unconscious themes from a psychoanalytical point of view. In the present survey the scoring procedure was based on Manfred Gardziella's (1985) work. All of the forty subjects used in the present study undertook the Wartegg Test. Väänänen (unpublished) adapted the scoring system from Gardziella's (1985) earlier work and established eighteen basic categories (see Appendix A). The psychologist Pirkko Väänänen undertook the scoring and interpretation of the participants without having any prior knowledge of those being surveyed. An impartial psychologist monitored the test to ensure it was reliable. The mean inter-scorer reliability correlation (Pearson/Spearman) between all the variables was 0.586, SD = 0.036. In their meta-analysis review, Soilevuo-Grønnerød and Grønnerød (2012) found that the Wartegg Test had an average inter-scorer reliability rate of r = 0.74, and had a validity for studies with a clear hypothesis rate of r = 0.33, (see also von Weissenberg, *in press*).

Traits, Measurement, Test:

PRF:

In the current study the Finnish version of the Personality Research Form was utilized (Jackson, 1997). The Finnish version of the PRF-E was used to monitor the criteria of cross-cultural validity, which has been indicated by Lei and Skinner (1982) as a form in which "each new edition should be empirically evaluated for equivalence with the original" (p. 33). The reliability of the variables was between 0.66 – 0.89, which amounted to a better correspondence than the figures reported in the original English version. Many validation studies have been carried out concerning the PRF and it can be said that its features meet the criteria of a robust instrument (Helmes and Jackson, 1977; Mayers and Ganster, 1983; Stricker 1974). Helmes and Jackson (1977) have reported that the mean loading item on their scale factor was 0.38, (see also von Weissenberg, *in press*).

Results:

The Composite Variables:

The first step in the data analysis was to draw conclusions about whether the results from the single variables of the three personality tests could form larger unities. There were originally 144 single variables from the initial three personality tests. A fragmented picture would have emerged if only single variables had been used and it would have been difficult to grasp the meaning of the results. The risk of mass significance is greater in reporting single variables than composite variables. In brief, the first step was to produce more meaningful variables and reduce the risk of mass significance by

unifying the variables from the PRF, Zulliger and Wartegg tests into larger composite variables. A calculation of the new composite variables was based on a factor analysis, practical and theoretical knowledge, and internal reliability.

This process resulted in three composite variables that covered a total of 25 preliminary variables. The results from the present study are based on these new composite variables: financial risk attitude, stress tolerance and complex problem-solving.

Financial Risk Attitude:

The financial risk attitude variable measured three types of attitudes: independent, conscientious and overconfident. Eight variables formed the risk attitude composite variable. Six of the eight variables measured some aspect of conformity vs non-conformity. A conformity aspect has been found in overconfident and conscientious traits (Niitamo, 1999). The present study also noted that overconfidence and conscientiousness load high on conformity. Those with high points on the risk attitude variable loaded higher on conformity. Those with low points on the variable loaded higher on Independence. The independent risk-takers had a more realistic view of financial risk. These topics will be further discussed in the results section. The financial risk-attitude variable consisted of four explicit variables and four implicit motive variables. The variables were 1. Stereotypic (X+, Zull) 2. Ordinary (Fq+Fqo:FquFq-, Zull). 3. Social Ambiton scale (Do+Ex+Ac, PRF) 4. Order (Or, PRF) 5.Concientousness (Cs, PRF) 6.Aggressivity (Ag, PRF) 7.Cautiousness (WZT). 8. Popular (P, Zull). A more detailed description of the variables can be found in Appendix B. The internal reliability of the variable, when using the Cronbach Alpha, was 0.669.

Stress Tolerance:

The stress tolerance variable measured a fund manager's level of distress tolerance. The stress tolerance composite variable of the current study consisted of ten variables. Those with high points on the stress tolerance variable loaded higher on tolerance and lower on stress or anxiety. It is possible to group the variables according to tolerance or distress measures. A. Tolerance (ego strength) variables: 1. Identity (s7, WZT), 2. Self-confidence (s1, WZT), 3.Ambition (s3, WZT), 4.Genuine interest of people (PureH, Zull), B. Stress or Anxiety variables, 5.Anxiety (s4, WZT), 6.Anxiety, bodily (Anxy, Zull), 7.Work efficiency (blockage, WZT), 8. Stress due to circumstances (Adj-es, Zull), 9. Unstable (Ynorm, Zull), 10.Attitude to conflict (s5, WZT). A more detailed description of the variables can be found in Appendix C.

The variables that were less obvious to understand are genuine interest of people and work efficiency variables. Less anxious people have been found both to be more interested of people (and less avoidant) in comparison to more anxious people (Zvolensky, Vujanovic, Bernstein and Leyro, 2010). The work efficiency variable measured anxiety that causes cognitive and emotional blockage that slows and hinders work related problem solving (Gardziella, 1985). The internal reliability of the variable, when using the Cronbach Alpha, was 0.636.

Complex Problem Solving:

In the current research did seven Zulliger variables form a composite complex problem solving variable. Those with high points on the complex problem solving variable loaded higher on an inner motivation towards complexity and problem solving. Those with low points on the variable had less ambition towards cognitive complexity. The variables were 1. Conceptualization (DQ), 2.Ambition (W/D), 3.Introtensive (EB), 4. Processing efficiency (Zd), 5. Active decision style (Ma:Mp), 6. Multisource perception (Blend), 7. Overview vs detail perception (Lambda). A more detailed description of the variables can be found in Appendix D.

The complex problem-solving variable measured whether a person was focused on

the 'big picture' or on details (W/D), and if s/he had an inner motivation towards complex problem solving (Exner, 1993). All variables concerned different aspects of cognitive processing. An active decision style measured active or passive decision styles. The processing efficiency measured the level of cognitive involvement, low scores = does not notice important information, high scores = pays too much attention to details. Conceptualization measured a qualitative aspect of the mentalizing process that belongs to the end process, including the naming of perception. The multisource perception measured if the person perceived decision cues from several sources or not. The overview or detail variable measured the risk of being disorganized by too many details (high points) or having superficial perception (low points). The internal reliability of the variable, when using the Cronbach Alpha, was 0.630.

A regression analysis was conducted in order to study the prediction of the three composite variables of the five-year performance.

Results, financial risk attitude, stress tolerance and complex problem solving in relation to five year performance.

Table-1:Regression analysis for variables predicting fund managers' five year performance (N=40)

Variable	B	SE B	β	Adj. R2	Final B	Model SE B	β	Adj. R2
Total Model								.538***
Financial Risk Attitude	-.313	.073	-.572	.309***	-.254	.061	-.469***	
Stress Tolerance	.020	.006	.456	.187**	.016	.005	.371**	
Complex Problem Solving	.021	.000	.461	.191**	.014	.005	.294**	

* p< .05. **p<.01. *** p< .001.

Financial risk attitude, stress tolerance and complex problem solving in relation to five year performances are shown and the results are presented in Table 1. The Adjusted R square of the total model was .538, p< .000. The amount could be judged as being high if one compares it to the general level of correlations in psychological studies. Meyer et al. (2001, p. 134) compared to results from studies within the medical sphere, and other applied sciences, and concluded how challenging it is to achieve correlations that are much higher than .30. The final model consisted of three composite variables: financial risk attitude, stress tolerance and complex problem solving. These three variables captured the most significant aspects of the motives underlying the decision-making actions of fund managers and their traits during both rising and falling markets. Their internal correlation between the three composite variables was not significant, meaning that they represented independent personal features. A major part of the results from the present study derived from implicit motives. Implicit motives represented the only variable in two out of three composite variables. Moreover, in the third variable its share was half. The sections of implicit motives that related to all aspects (implicit + explicit) of the composite variables were the following: Financial risk attitude 4/8; stress tolerance 10/10; complex problem-solving 7/7. The relationship between implicit and explicit motives was partly skewed by the fact that there were two tests measuring implicit motives and only one in relation to explicit motives. The results are analyzed in the discussion section below.

Discussion of Results:

Financial Risk Attitude:

The risk attitude variable measured the differences between conformist and independent attitudes. Conformist attitudes consisted of two subgroups that had opposing stances to risk: those who were risk averse and those prone to risk. This can be confusing, because one can become accustomed to thinking that those averse to or prone to risk represent each other opposites. In-depth analyzes showed that they were both related to a conventional or conformist attitude to risk. Conformity also entails a way to tackle

ambivalence, uncertainty and feelings of insecurity. Von Weissenberg (2017b) concludes that conformity increased in crowded open offices and impaired the performance of investors, especially in descending markets. Fund managers in larger and more socially dense open offices underperformed due to increased conformity. There is a seductive appeal for humans in feeling more secure, in control of situations and self-confident. To possess a more closed attitude, in the form of being either risk averse or risk prone, reduces feelings of uncertainty and thereby increases our immediate feeling of confidence. However, this comes at the cost of reality perception (Geist, 1999; Tuckett, 2011), because a fixed attitude is more rigid and subjective. Subjectivity is usually in conflict with objectivity or at least it can compromise and distort reality perception. Overconfidence was measured by variables of dominance, exhibition and achievement. All these three categories are related to a strong relationship to others in the social setting: an individual dominates over someone; is able to exhibit himself/herself to someone and s/he can accomplish things in relation to someone else. This means that excessive overconfidence leads to dependency on social factors, such as market trends. A higher dependency on market trends is usually contradictive to focusing on fundamental evaluation levels. It has been observed that current pricing level (market trend) has a significant influence on the evaluation of fundamental value. In a rising market people tend to higher fundamental value estimation and in a descending market to lower fundamental value estimation (Marsatand Williams, 2013). Overconfidence has also been connected to under-reaction and overreaction to market information (Odean, 1998). Individuals who are risk averse are more connected to difficulties in handling losses and feelings of losing control. Losses and feelings of uncertainty easily evoke harm and anxiety. Conscientious people have been found to have a stronger need for control and more difficulties handling feelings of uncertainty and ambiguity (Jackson, 1997; Niitamo, 1999). This trait easily leads to individuals having risk averse financial attitudes. Conscientious individuals are usually more anxious and perceive too much risk, whereas the overconfident are too carefree and perceive too little risk. When the overconfident and the conscientious experience problems in regard to integrating thought with feeling, they do not usually learn from economic experience (Gambetti and Giusberti, 2012). In the present study, overconfident individuals prone to risk, as well as those who are conscientious and averse to taking risks, underperformed in their five-year fund performance.

The third category—individuals possessing independent attitudes to risk—over performed in the present study. Those with an independent attitude to risk can be described as being more inward looking, focused, analytic, are able to cognitively process information and are guided by a mature character that actively contemplates different alternatives, rather than reacting to outer or inner urges. Variation in performance is largely dependent on an individual having either a closed or open and independent attitude. The independent risk attitude leads to a more realistic degree of perception and thereby a fund manager can more clearly make judgments and learn the patterns of financial markets. On the other hand, someone with a conformist attitude reacts more to impulses and is not able to differentiate between inner psychological impulses and market reactions. Previous research has shown that risk attitudes are domain specific (Slovic, 1972; Belcher, 2010). This means that the risk attitude would not significantly correlate between, for example, financial matters and travelling to dangerous places. However, the results from the present study raise the question of whether there could be a general risk attitude that has three categories: two conformist mindsets (overconfident individuals prone to taking risks and conscientious people who are averse to risk) and an independent group who are capable of assessing risk more realistically. It

is hoped that future research will answer this question in a categorical manner. If there is, however, a general risk attitude categorization, would it have been more correct to call the financial risk attitude variable for risk attitude variable.

Stress Tolerance:

The stress tolerance composite variable of the current study consisted of ten variables. First the tolerance aspect will be discussed and secondly the stress aspect. The tolerance variables were connected to ego strength, such as self-confidence, identity, and the ability to endure ambiguity. Self-confidence and sense of identity are important factors in a person's self-conception. Incoherence in self-concept leads to greater fluctuation in personality and has been found to increase daily stress (Diehl and Hay, 2010). A better sense of identity and self-confidence is known to protect against non-adaptive anxiety and stress impulses (Tähkä, 1993).

The ability to endure ambiguity correlates positively to an individual's tolerance of stress (Bernstein, Zvolensky and Moos, 2009). In the present study, those individuals who had a low level of endurance for ambiguous situations underperformed. To have an individual stance in relation to the group (market) viewpoint easily evokes ambiguity. Those who can endure this conflict have a better possibility to have an independent viewpoint and thereby to perceive the outside world more realistically, not for example believing in market mantras such as 'new economy'. The anxiety variables measured anxiety from several different viewpoints. First, how the perceptions, thoughts and emotions of people suffering from anxiety are blocked and stifled? This has at least two consequences in the investment sphere: first, it slows down cognitive and executive processes because the information flow is stocked or circles the same paths (Gardziella, 1985). Secondly, it blocks an individual's capacity to judge a situation, because it prevents realistic perception and thereby facilitates a dependency on inner assumptions and guesswork. In the present study, a noticeable relationship between instability, fluctuation and increased anxiety was observed (Diehl and Hay, 2010). This can be understood by assessing what factors augment a fund manager's stress, which consequently increases his/her dependency on outer clues, such as market sentiment, expectations and trends and that has been found to undermine performance (Prechter and Parker, 2007; von Weissenberg, 2017a).

The present study indicates that the ideal level of tolerance of distress is a high one in the investment field, which is logical considering the raised levels of stress associated with work in this area (Mohacsy and Lefer, 2007).Fund Managers have been found to underperform in more stressful conditions. Von Weissenberg concludes (2017b) that investors working in crowded open offices were more stressed and underperformed. This was especially the case in descending markets. The key problem related to possessing a low tolerance of distress is that individuals tend to maladaptively respond or adapt to distress. These individuals may attempt to avoid negative emotions and adverse states. Isen (2002) found that a positive mood increases cognitive flexibility, whilst anxiety (a bad mood) has been found to make decision-making more rigid and narrow (Gardziella, 1985). Those fund managers who were more tolerant of stress maintained a higher degree of flexibility in regard to their decision-making and were probably less narrowly focused on only avoiding anxiety and loss.

Complex Problem Solving:

The composite variable of complex problem solving consisted of seven variables that could be divided into four categories. 1. Big picture vs attention to detail, 2. Active vs Passive decision style 3. Inner logic vs trial and error decision style and 4.Complex vs non-complex cognitive perception and processing.

The central theme of big picture vs attention to detail was if the fund manager had the

ambition and capacity to process and perceive a 'big picture'. The capacity to create a bigger picture demands more ambition and cognitive effort than attention to detail, which has been found to be less demanding (Exner, 1993). The ambition (PRF, Ac) variable measured ambition in a strained sense. According to the present study, ambition in a strained sense correlated negatively with fund performance. This can be interpreted as indicating that ambition should be viewed as being more of an inner motivator and as a natural attitude, rather than a need to strive to make an impression on others.

In the financial markets it is of key importance to understand that evaluation levels follow a pattern of economical, sociocultural and psychological principles that are of cyclical nature. Those who can see this bigger picture knows with greater probability were the markets are heading in the long run and can benefit from this knowledge.

The variable also measured if the fund manager had a more active or passive decision style. The active style have been found as more responsible and the passive style more avoidant (Exner, 2000). The active/responsible style was associated with higher performance and passive/avoidant with lower performance for the five year period. It was thought of importance that the fund manager also had some passive motivation because it is tied to the capacity to wait (Exner, 1993). In the financial markets it seems to be of importance both to act in the right time but also to have the capacity not to act, to wait and see and thereby to avoid for example excessive transactions that has been found to reduce financial performance.

A positive correlation between fund performance and the introtensive decision style was found. This meant that fund managers who depended in their decisions more to the logic executed in their internal mental world (Exner, 1993) did perform better than those who relied on trial and error type of decision making. The result is understandable when one has in mind that every trial on the market costs in different trade fees. An inner decision style reflects the person's source of gratification being more in the inner life. This probably also protects in some respect against the temptation to participate in the trend oriented fads that exist in the markets. Delaying important decisions have also been found to increase the quality of them (Exner, 1993). An inner vs outer emphasis on decision-making has traditionally been studied within the concept of the locus of control. The present study supports earlier findings in which an inner locus of control promotes greater independence vis-à-vis the outer world (Wang, et al, 2010).

The variable also measured the depth and focus of the cognitive process. Those individuals who possessed a deeper and more focused mindset in the current study performed better when compared to those with a general and unfocused mind. These results indicate that the ability to absorb large amounts of central details led to increased performance. The results support earlier findings by von Weissenberg (2017b), who found that the complex problem-solving tasks of fund managers demand a capacity to process and integrate task-relevant cues. One reason for a decline in performance results from higher arousal levels in descending markets. This is due to disturbances in an individual's ability to concentrate, especially in larger and more socially dense open offices (von Weissenberg, 2017b).The present study confirms the finding that an unincorporated, or swift, approach to problem-solving information is a liability (Exner, 2000). The results of the present study partly support earlier findings by Filbeck, Hatfield and Horvarth (2005), who reported that those possessing a clear preference for thinking (vs feeling) had an increased tolerance of risk. It also supports findings that mental processing is the best way to avoid harmful situations (Exner, 2000). The relationship to detail was twofold. On the other hand, there was a high absorption of favorable detail, whilst on the other hand it was important that the manager also had the capacity to distance him/herself from the market information flow.

The risk of cognitive and emotional overload is substantial within the profession of fund managing (Mohacsy and Lefer, 2007). This is probably due to a myriad of information that is accessible in an investment setting and the emotional responsibility to take care of a large sum of other peoples' money. An independent financial risk attitude, a higher stress tolerance and ambition toward complex problem helps the decision maker to keep the focus on the essentials. Keeping the focus on essentials is an important aspect of managing emotional and cognitive overload. If a general focus is placed on too many details it is probable that an investor would be overloaded with information, whereas a focused mind-set enhances to sift through the market information flow. The concentrated mind significantly reduces cognitive load and frees up an individual's capacity for dynamic decision-making.

Conclusions:

The present study has focused on a thorough analysis of the personality features of professional fund managers. The study combined tests relating to traits of explicit and implicit motives (McClelland, 1987) with fund managers' five-year performances. The performance variable consisted of real professional fund managers' five-year risk adjusted results from March 2000 to March 2005 (Eufex DJIA, 2005). The robustness of the results was strengthened by the fact that the performance measurement used in the survey contained sustained ascending and descending market periods: a declining market that lasted from March 2000-October 2002 and an ascending market from October 2002-March 2005 (Figure 1.). The high predictive percentage of the present study can be partly understood by the fact that the beginning of the performance evaluation period started at the peak of the ICT (Information and Communication Technologies) bubble. At this time underperformers probably had a higher level of sentiment driven ICT stocks (Fernandes, et al, 2013).

How should these results be understood? First, one can say that the present study confirmed that personality features (implicit and explicit) have a strong impact on fund performance. It supported earlier research findings that posit that there is a relationship between personality and investment performance (Durand et al., 2008, 2013; Hunter and Kemp, 2004; Lauriola and Levin, 2001; Menkhoff et al., 2006; Törngren, and Montgomery, 2004; Wong and Carducci, 1991). The present study also showed that implicit motives, here measured by Zulliger and Wartegg tests, have been a neglected area within personality studies in the financial area. This could have partly been to do with the unfamiliarity of these methods within scientific psychology. Any problems in finding professional fund managers to accept the time consuming and revealing nature of tests did not occur in the present research project, although the testing procedure took over two hours.

The three composite variables mostly reflect implicit motives and are probably not educable or changed by the force of will on a large scale. According to the results of the present study, if one wants to improve the performances of fund managers one of the main factors is to stress that you have employed the right person for the job. One conclusion of the present study is that in the assessment procedures it would be important to evaluate (test) both implicit and explicit motives; implicit motives being more important than explicit motives. The present study could also benefit HR and assessment professionals and career consultants.

II. Enhancing independent thinking. In the financial sector there are numerous pressures exerted for individuals to conform and to go with the trend (von Weissenberg, 2017a, b). Customers all too often choose their fund based on one-year performance records and the media focus too much on short evaluation periods (Shiller, 2000, 2005). This easily leads to herding among fund managers, which spreads via contagion (Prechter and Parker, 2007; Shiller, 2000). Inner-directed individuals

also have a greater ability to resist a collectivist culture that has been connected to sentiment driven investments (Chui, et al, 2010).

Fund management companies could plan strategies and fund rules to enhance independent thinking, which provide opportunities for active funds to be genuinely active. For example, they could change (usually reduce) the amount of stocks in their portfolio so that the portfolio does not more or less automatically copy the index (Lowenstein, 2006). Education of fund managers in the psychology of markets and managing could also help managers to separate facts from exaggerated expectations and sentiments.

III. Reducing fund manager stress. Fund managers are exposed to stress from multiple sources. The fund- investing environment is a high stress environment for several reasons: responsibility for other people's money; unpredictable evaluation levels; peer pressure; public (usually online) evaluation of performance; a potentially hectic work environment etc. All these reasons can cause major stress for a fund manager.

There are actions that an employer could take to reduce a fund manager's stress. Von Weissenberg (2017b) concludes that larger and more socially dense open offices increase fund managers' stress. Employers should acknowledge other measurements of success other than one-year fund performance. Measures could also be undertaken to help fund manages to reduce their stress levels by promoting regular vacations, mentoring activity, as well as lowering the threshold for seeking help or counselling etc. Investors have been found to have a high threshold for seeking therapy (MohacsyandLefer, 2007).

The limitations of the present study concerned the ethnical and cultural homogeneity of the subjects. All the subjects were from one city in one fairly small country. An international study would make the results more reliable. The performance variable although represented both national and internationally listed equity. Further research is needed to provide more evidence that affirms that the composite variables of the present study are as robust as they appear and are able to predict performance so strongly. There is also the possibility, in contradiction to current findings (Belcher, 2010; Slovic, 1972) that it is in some respects possible to generalize about the risk attitude variable to other risk domains. However, this is also a matter for further investigation.

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Appendix A

Wartegg Categories:

1. Working time
2. Working standard
3. Working efficiency
4. Working carefulness
5. Working objectivity in objective situations
6. Working objectivity in emotional and social situations
7. Taking facts into consideration
8. Stimulus dependence
9. Working authenticity
10. Ambition
11. Working under pressure
12. Relationship to obstacles and ambivalence
13. Economy of performance
14. Working liberty
15. Activity resources
16. Working aggression
17. Handling of borders
18. Relationship to humans

Appendix B

The financial risk attitude consisted of the following eight single variables (Z-scores) derived from the Zulliger and Wartegg test methods.

1. Stereotypic (X+, Zull). This gives information about conventionality.
2. Ordinary (SumFQ+Fqo:SumFQu+FQ-, Zull). Ordinary vs unordinary perception.
3. Social Ambiton scale (Do+Ex+Ac, PRF). Provides information about extrovert ambition and need to impress on others.
4. Order (Or, PRF). This gives information about how important order and neatness is.
5. Concientousness (Cs, PRF). This provides information about conscientousness and need of a structured environment.
6. Aggressivity (Ag, PRF). This gives information about aggressivity and anda attacking attitude.
7. Cautiousness (WZT). This provides information about cautiousness and tentativeness.
8. Popular (P, Zull). This gives information about a tendency to stereotypical thinking.

The Financial Risk Taking variable was calculated by adding all the variables (Z-scores) together minus Cautiousness (WZT). The Wartegg variables were originally scored according to the ideal, meaning for example on the anxiety variables that less anxiety was scored with higher points and increased anxiety received lower points.

Appendix C

The stress tolerance variable consisted of the following ten single variables (Z-scores) derived from the Zulliger (Zull) and Wartegg (WZT) test methods.

A. Tolerance (ego strength) variables:

1. Identity (s7, WZT). This provides information about integrity and the cohesion of identity.
2. Self-confidence (s1, WZT). This provides information about self-confidence.
3. Ambition (s3, WZT). This gives information about the level of ambition.
4. Genuine interest of people (PureH, Zull). This gives information abouta genuine interest in people.
5. Attitude to conflict (s5, WZT). This provides information about ambiguity, conflict and tolerance of uncertainty.

B. Stress or Anxiety variables:

6. Anxiety (s4, WZT). This provides information about the level of anxiety of a person and how they react to anxiety.
7. Bodily anxiety (Anxy, Zull). This gives information about bodily concerns and problems associated with body image.
8. Work efficiency (blockage, WZT). This provides information whether—and to what degree—a person's cognitive and emotional processes are blocked or fluid.
9. Stress due to circumstances (Adj-es, Zull). This gives information about how much does the experience of stress depend on situational factors.
10. Unstable (Ynorm, Zull). This concerns the fears of an individual about not being able to act.

The Stress Tolerance variable was calculated according to the following formula (Z-scores): Anxiety (s4, WZT - (Anxy, binary Zull) + Work efficiency (blockage, WZT) - Stress due to circumstances (Adj-es), Zull + Unstable (Ynormtive, Zull) + Ambition (s3, WZT) + Identity (s7, WZT) + Self-confidence (s1, WZT) + Genuine interest of people (PureH, Zull) + Attitude to conflict (s5, WZT). The Wartegg variables were originally scored according to the ideal, meaning for example on the anxiety variables that less anxiety was scored with higher points and increased anxiety received lower points.

Appendix D

The complex problem solving variable consisted of the following seven single variables from the Zulliger (Zull) method.

1. Conceptualization (DQ, Zull). An aspect of the process that belongs to the end process, including the naming of the perception.
2. Ambition (W/D, Zull). The relationship between more ambitious and effort taking big picture perception in relation to less effort attention to detail perception. High scores = more ambition.
3. Introtensive (EB, Zull). Coping or decision style (Introtensive/Ambitent/Extratensive). Closely related to introvert vs extravert.
4. Processing efficiency (Zd, Zull). Low scores = does not notice important information. High scores = pays too much attention to details.
5. Active decision style (Ma:Mp, Zull). The variable measures if the person has a more active and responsible or passive and avoidant decision style.
6. Multisource perception (Blend, Zull). This gives information about complexity. Lower than average scores indicate narrow perception; higher than average scores indicate emotional strain due to complex perception.
7. Overview vs detail perception (Lambda, Zull). This provides information about either a 1. Narrow or simplified, but economical viewpoint and less risk for overload 2. More detailed and complex perception of surrounding with a risk for stress and psychological overloading.

The complex problem solving variable was calculated by adding all the variables together as Z-scores.

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Optimism Index: A Screening Tool for Mental Health

Padmakali Banerjee

Mental health and emotional stability are very important factors in everyday life. In order to improve emotional mental health, one needs to understand the present status of one's mental health in the context of developing resilience and fortitude in dealing with the dynamic environment. Our emotional mental health has a direct bearing on our personal and professional productivity.

Optimism, an important aspect of mental health index is the power, the central force within an individual which propels him towards higher accomplishments. The word optimism is derived from the Latin word, "optimus" which means "best". Optimism has been defined by Martin Seligman (1991) as being proactive in reacting to the problems with positive attitude and confidence and effectively working towards the same. Thus, optimism is the innate belief system of an individual and it suggests that an optimist would always looks for the best and is positive that good things will certainly happen. Optimism is also a major dimension of emotional intelligence which may lead to enhanced Quality of life and mental health of an individual.

Optimism is an indicator of a positive thinking process and about consequences when in the midst of dealing with stress and adversities (Schier & Carver, 1985). Higher levels of optimism have been linked to higher levels of well-being (Karademas, 2007), higher levels of knowledge, risks associated with heart attacks (Schweizer and Koch 2001) and higher levels of exercise and lower levels of body fat and coronary risk (Shnek, et.al 2001).

To measure optimism an assessment tool with sturdy psychometric properties - "Optimism Index Oi 1.1" has been developed by Padmakali Banerjee. The Oi identifies an individual's core strengths in the areas of Positive Emotions, Engagement, Relationship Networks, Meaningfulness and Accomplishment. This index rates the 'Optimism' level of the organization, group or an individual. This test can be taken online at www.optimism-index.com.

This test is not only a measure of present performance but is also a predictive measure of success. It is being popularly used for screening mental health in hospitals, clinics and in community for its simplicity in administration and scoring. It screens patients with depression, anxiety, stress, phobias OCD and PTSD with considerable success. The optimism Index has yielded better prognosis and desirable changes when used as a therapeutic intervention and counseling to patients and relationship management (Banerjee and Puri, 2016).It has emerged as a screening tool for mental health issues of individuals 12 years onwards. It is also being used as screening tool during selection interviews and developmental tool for training executives in business organizations.

In the normal population, based on the analysis of the optimism index scores individuals are classified into ten categories viz Collaborators ,Entrepreneurs, Energetics, Synergists, Networkers , Analysts, Innovators, Go getters, Experts and Leaders. This classification highlights the attributes and strengths of individuals and creates distinction. This helps them in making career choices and engaging in suitable professional roles. Knowledge of results on this test benefits not only the individual but also the organization in decision making related to talent management.

Optimism Attitude Model (OAM): Optimism Attitude Model presents simple steps to bring in the intervention required to enhance the levels of mental health and wellbeing, leading to development of efficacy. The concept is shown diagrammatically as below. The applicability of OAM model has been demonstrated in a research study conducted

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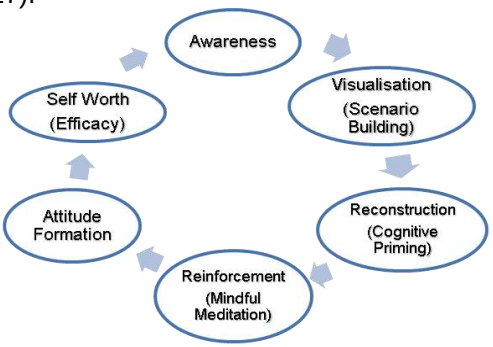
Key Words: Optimism, Mental health, screening tool.

on a group of substance dependent patients. The utility of this model is also explored in other conditions (Banerjee and Puri, 2016, 2017).



Optimism Attitude Model

Interface of Optimism Index (OI) with Somatic Inkblot test (SIS) – A Case Study: Somatic Inkblot series-II (Booklet form) (Cassell, 1990, Cassell and Dubey, 1998, 2003) was administered to 54 years, male patient suffering from reactive depression with suicidal ideation. He developed the symptoms 5 years earlier after severe loss in business. He consulted a psychiatrist who treated him with antidepressant. He noticed some relief in depressive thoughts and suicidal ideation though temporarily. He was administered Optimism Scale and SIS. At initial assessment he scored lots of depressive responses with low scores on Optimism Scales. He showed low scores on human responses, interpersonal relations and group conformity (team building). After five weeks of reconstructive psychotherapy and relaxation, he was re-administered SIS-II and Optimism Scale. Tremendous changes were visible on his profile and the human responses; inter personal relations and group conformity scores increased along with scores on Optimism Scale. The increased scores on both the scales along with patient's statements that I am relieved at least fifty percent of my symptoms speak the power of both the tests SIS and Optimism Scale as a valid and successful instrument during therapeutic intervention in clinical setups and screening people during selection interviews in business organizations. Both the tests help in assessing and ascertaining interpersonal relationship, aggression, thinking in group conformity, emotional stability and total mental health of the person. When both the tests were compared, the findings were going in one direction, suggestive of positive correlation. It can safely be concluded that both the instruments can be used as diagnostic, therapeutic and screening tools in clinical situations and industrial set ups.

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Cognitive Drill Perspective on the Nature of Stimulus in Anxiety Disorders

Rakesh Kumar and Bankey L. Dubey

Cognitive Drill Therapy (CDT) has emerged as an efficient procedure of psychological treatment for anxiety spectrum disorders specifically phobia and OCD. It uses a straightforward conceptualization of stimulus bound anxiety. A stimulus triggers a threat perception which elicits sympathetic arousal leading to safety behaviors in the form of avoidance and behavioral attempts to prevent perceived threatening outcomes. The paper, share our perspective on the nature of stimulus in anxiety disorder and utilization of Cognitive Drill Therapy.

Stimulus can be any object, exposure to which triggers threat perception in vulnerable individuals. For example, photograph of a dog in an individual with dog phobia. Stimulus can be both objective and subjective. Objective stimulus includes all kinds of exogenous objects, situations and events such as speaking to authority figures in social phobic individuals, closed places in claustrophobia and lizard on the wall in individuals with phobia of animal type. Subjective stimulus includes all endogenous sensations, thoughts, images and urges that trigger threat perception such as pain in cardiac region in health anxiety, having obscene thoughts about religious deities, sexual images and abusive thoughts in individuals with Obsessive-Compulsive Disorder (OCD).

Exogenous and endogenous stimuli might be interconnected. (1) A simple mental representation of exogenous stimulus such as mental imagery of dog recreated from memory is an endogenous stimulus which may also trigger the same threat perception triggered by exogenous stimulus. (2) An exogenous stimulus elicits an endogenous reaction which in turn serves as stimulus for threat perception. For example, hearing the news of heart attack (exogenous stimulus) elicits discomfort in abdomen and increased respiration (sympathetic arousal) which in turn triggers a threat perception of impending heart attack. This scenario can also be called as Two Layered Stimuli. Layer-I: Exogenous Stimulus; and Layer-II: Endogenous Stimulus. The cases in which two layered stimuli are present; Layer-II stimulus is usually connected with threat perception.

Two layer stimuli are present in obsession also. For example, when an individual with OCD, passes through a temple (Layer-I: exogenous stimulus), it elicits obsession of abusive thoughts (Layer-II: endogenous stimulus) triggers threat perception of harm of some kind. The threat perception is connected with layer-II: abusive thoughts.

For handling anxiety spectrum disorders, we need to give specific attention to two aspects of stimulus. (1) Determination of stimulus as exogenous &endogenous (2)Determination of the presence of Layer-I and Layer-II stimuli. Cognitive Drill (Jain, 2016) capitalizes on this understanding and determination of the nature and type of stimuli. (1) When exogenous stimulus is primary, the drill is formulated with reference to exogenous stimulus (2) When endogenous stimulus is primary; the drill is formulated with reference to endogenous stimulus. Both in generalized anxiety disorder and panic disorder, mostly the endogenous stimuli are prominent. (3) When two layer structures of stimuli are present, cognitive drill is designed with reference to both the layers.

In cognitive drill, it is postulated that the connection between stimulus and threat perception is at fault. This wrong connection is the irrational part in anxiety disorder. For example, seeing a picture of dog (exogenous stimulus) rationally is not connected with any threat of biting, catching rabies and dying of the infection. The explicit aim in cognitive drill is to restore rationality by achieving disconnection between neutral; or minimally threatening stimulus and the threat perception. This aim is based on the obvious

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fact that the stimulus existed in the environment prior to onset of anxiety disorder, would also continue to exist after recovery from the anxiety disorder. Continuity of the presence of stimulus in the environment is a reality, difficult to alter largely. Similarly, the threat perception will continue to exist in the individuals, which is natural response to objective threatening stimulus such as proximity to poisonous snake. The problem in anxiety disorder is inappropriate connection between the threat perception and neutral stimulus. When therapeutic intervention, disconnects the irrational and inappropriate connection between neutral stimulus and the threatening perception; the problem of anxiety and fear is resolved. For example, after the treatment, when a dog phobic individual is exposed to the picture of dog, dog in movie, dog in street, proximity to dog in various situations, such exposure fails to trigger threat perception, and the phobia of dog is over.

Through the process of stimulus generalization, a number of stimuli become associated with anxiety disorder present in an individual. For example, a person with dog phobia may have a range of stimulus associated with threat perception. Such objects may include, dog in street, dog in movie, group of dogs, barking dog, size of the dog and so on. In cognitive drill, we conduct a comprehensive survey to identify as many interconnected stimuli as possible associated with the threat perception. The list of stimuli is utilized in sequential manner to achieve disconnection between each stimulus and threat perception. The cognitive drill will be performed by taking each of such listed objects in a sequential manner. The person will be required to perform CDT for dog in various situations.

The repetitive cognitive drill, leads to ‘empirical realization’ of the irrationality of the connections between stimuli and threat perception. This ‘empirical realization’ of falsity further leads to blocking of sympathetic arousal elicited by faulty threat perception connections and the person stops getting engaged into avoidance and safety behaviors.

The efficacy of cognitive drill is also demonstrated in various case studies on anxiety disorders; OCD (Kumar et al., 2012); agoraphobia with panic disorder (Kumar & Dwivedi, 2015); phobia (Verma et al., 2016); multiple phobias (Verma et al., 2016); fear of height (Verma& Kumar, 2016); and specific phobia (Arya, et al, 2017).

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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	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
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22	International Journal of Geriatric Psychiatry	U. K.	English
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