ASSESSING A PATIENT'S "CONTROL PROFILE"
IN A PSYCHIATRIC OUTPATIENT CLINIC

Relationship to Anxiety and Depression Inventories

Deane H. Shapiro, Jr., Ph.D.; Madhu Sheila Josephs, Ph.D.; Ellie Nezami, Ph.D.; Lynn Nelson, Ph.D.; Marsha Stein, Ph.D.; & Louis Gottschalk, M.D.
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ABSTRACT

The psychological construct of control has been shown to be an important variable in psychotherapy, but the construct is complex, and its assessment requires multidimensionality. In order to determine the relationship between the construct of control and other standard assessment instruments, thirty-three self referred psychiatric outpatients were given a battery of psychometric tests as part of their initial intake: MMPI, Beck Depression Inventory, SCL-90, Gottschalk/Gleser Content Analysis, and the Shapiro Control Inventory (SCI). Across all tests, the SCI correlates with degree of psychopathology in general and in particular with symptoms of depression and anxiety. Overall, the present findings are consistent with the underlying conceptual bases of the control inventory. The clinical importance of these findings, and guidelines and suggestions for further research are offered.
THE IMPORTANCE OF A PATIENT CONTROL PROFILE
IN PSYCHOTHERAPY ASSESSMENT
Relationship to Other Inventories

The past three decades have shown remarkably strides in our understanding of the role of human control and self-control in psychopathology, particularly in depression and anxiety (Seligman, 1975, 1991; Selye, 1976; Beck, 1976, 1989; Bandura, 1989; Watson & Tharp, 1993; Rosenbaum, 1993; Shapiro, 1990, 1995). The use of micro-linguistic content analysis research has shown that individuals entering psychotherapy, regardless of clinical diagnosis, make significantly more statements of feelings of lack of control, loss of control, and fear of losing control than statements they are feeling in control, or believe they can gain control (Shapiro, Bates, Greensang, & Carrere, 1991). Research is also showing that an individual's beliefs about that they have or can gain control is often as important as actually having control (Lefcourt, 1973; Glass & Singer, 1973; Bandura, 1977; Taylor & Brown, 1988). Therefore, it is critical to investigate a person's self-perceptions regarding control, what is referred to here as a Control Profile.

In the 1960's there were two major developments regarding control theory, research, and practice. Julian Rotter developed a first generation control inventory, a locus of control assessment instrument within a social learning theory context (1966). Rotter's test was a forced choice instrument, in which a person's score was either internal or external, and involved general domain assessment. Karl Menninger, within a neodynamic context,
posited a unifying theory of control and psychopathology. Menninger stated that mental illness, from mild anxiety to schizophrenia, occurred along a continuum: the more dyscontrol a person felt, the more mental illness. (Menninger, Maynam, Pruyser, 1963).

Research over these past three decades has shown that control is a more complex, multifaceted construct than initially thought. There are culture bound features to Western psychology's understanding of control as active and instrumental (Shapiro, Evans, Shapiro, 1987) and that having active, instrumental control is not always positive (Thompson, 1988; Burger, 1989; Evans, Shapiro, Lewis, 1993). To reflect this increased understanding, measurement of the psychological construct of control requires similar sophistication of its multi-faceted nature (cf. Levenson, 1974; Wallston et al, 1976, 1978; Shapiro, 1985, 1994). Wallston and colleagues (1976, 1978) developed a second generation control measurement reflecting two refinements over Rotter's: a) from locus of control in the general domain to domain specific: health; and b) from control as unitary construct to a multi-dimensional factor involving internal, external other, and external chance.

Since Wallston's instrument, four additional refinements in our understanding of control have occurred over the past sixteen years: 1) sense of control needs to be understood both as a generalized expectancy (Rotter, 1966; Wallston, 1978) and as an individual competency (Bandura, 1977, 1989; Skinner, Chapman, et al, 1989; Weisz, 1990) and needs to be measured in both the general domain and in specific domains. Two different modes of
positive coping have been delineated: an active assertive mode of control; and a yielding accepting mode of control (Weisz and Rothbaum, 1982; 1984; Carver & Schierer, 1988; Lazarus & Folkman, 1984; Linehan, 1993; Dougher, 1994). Three, the importance of motivation for control (Burger, 1979, 1985; Wallston, 1992) has been recognized as a variable separate from locus of control; and 4) agency or source of a person's sense of control needs to include self, others, and Other—including religious and spiritual beliefs (Rotter, 1966; Wallston, 1978, 1992; Bergin, 1991; Taylor, 1983; Shapiro, Lindberg, et al, 1994).

Over the past sixteen years, Shapiro and colleagues have sought to develop and validate a third generation, multidimensional control assessment instrument, the Shapiro Control Inventory (SCI) which addresses the above four issues. The goal of the inventory is to provide a comprehensive control-based assessment of a patient which has direct relevance to clinical intervention. The classic formulation of Gordon Paul regarding the need for specificity in psychotherapy research can be formulated in control terms: What control-related intervention is most effective for a particular individual patient with a specific control profile and with a particular control-related problem? (cf. Paul, 1966, 1967). To address this question, an essential first step is the development of a control profile from which clinical interventions can be tailored.

The development, reliability, and validity of the SCI has involved three thousand individuals ranging in age from 14 to 88,
using both theoretical, inductive, and deductive means (cf. Haynes, 1992) (see Shapiro, 1994 for summary).

The procedure utilized for item development of the SCI scales was multi-method involving a combination of three approaches to personality inventory construction—external (empirical); inductive; and deductive (Burisch, 1984). Several different validity approaches have been utilized. Following the lead of Matarazzo (1992) who described the importance of biological correlates of psychological constructs, neuroanatomical brain correlates of the construct of control and the two positive modes of control have been established (Shapiro, Wu, Buchsbaum, in press). The SCI has been shown to have discriminant validity between normals and an at risk populations—Adult Children of Alcoholics—(Shapiro, Weatherford, Kaufman, 1994); between normals and those with restricted eating disorders (Shapiro, Blinder, Hagman, Pituck, 1993); and to distinguish control profiles at different stages of adult lifecycle development (Shapiro, Sandman, & Grossman, 1995). The SCI has also been shown to have discriminant validity between normals and four other clinical populations—borderline personality, generalized anxiety disorder, panic attack, and depression--; divergent validity from the Rotter Internal External Locus of Control Scale (1966) and Wallstons' Health Locus of Control Scales (1978); and incremental validity over both Rotter's and Wallston's tests in terms of both sensitivity and specificity (Shapiro, Potkin, Jin, 1993).

The purpose of the current study was to further refine and extend the construct validation of the SCI, and to report its use as part of a standard psychosocial battery assessing individuals
entering treatment in an outpatient psychiatry clinic.

METHOD

SUBJECTS AND SETTING.

Subjects were 33 consecutive individuals entering the UCIMC Adult Outpatient Psychiatry Clinic. Subjects were 58% female; mean age of 36.7 (SD: ??); 97% Caucasian; 42% single never married; 21% married. All had a high school degree and nearly 50% had completed college. However despite their degree of education, 53% of the sample were unemployed. Fifty-five percent had either a mood or an anxiety disorder; other diagnoses included psychotic disorder, substance abuse disorder, impulse control disorder, and adjustment disorder. All subjects were given a standard battery of psychosocial assessment instruments as part of the initial intake procedure.

PSYCHOSOCIAL INSTRUMENTS

MMPI. The Minnesota Multiphasic Personality Inventory (MMPI) is a commonly used measure of personality and emotional status in many studies involving test validity. Often the MMPI and the new MMPI-2 are used as criterion measures against which other tests are compared. The standard MMPI consists of 570 items endorsed as true or false providing information on the following ten scales: hypochondriasis, depression, hysteria, psychopathic deviate, masculinity/femininity, paranoia, psychasthenia, schizophrenia, hypomania, social introversion (Butcher & Williams, 1992). Criteria for inclusion for the MMPI included no omission of more than 30 items (cf. Greene, 1991) and no Scale F equal to or greater than 23. K corrected scores were used in all analyses. Of pri-
mary interest in this study was scale 2, depression. Because scale 2 also includes items involving symptoms of anxiety, the psychasthenia scale (7) was used as a comparison index in the present study. In so doing a direct measure of degree of "psychological turmoil and discomfort" (e.g., obsessive thinking, compulsive and ritualistic behavior, ruminations, feelings of insecurity and inferiority) would be obtained.

BDI. The Beck Depression Inventory (BDI) is a 21 item self-report measure used to assess depression in adults. Respondents choose one of our statements (0-3) reflecting increased levels of sympatamatology (Beck, 1979).

SCL-90-R. The Symptom Check List (SCL) used was the 90 item version of the self-report inventory. All items are rated on a five point scale ranging from "0" (not at all) to "4" (extremely). Nine factors are provided: somatization, obsessive compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism, and a global symptom index (Derogatis, 1977). Of primary interest in this study was scale 3 on depression, and scales 5 (anxiety) and 7 (social phobia).

Content Analysis. The content analysis assessment is based on coding a five minute verbal sample of a patient's response to the question "????<Ask Marsha?." Speech patterns are clausred, and scored based on the work of Gottschalk/Gleser (1969, 1986, 1995) for the following: depression, anxiety, and cognitive impairment, hope, hostility, and social alienation.

SCI The SCI is a 187 item paper and pencil inventory which has nine scales and five additional refinements. There are four
sense of control scales, three in the general domain measured with a 7 point Likert format (overall, positive, negative); and one domain specific measured by a 6 point Likert format (consisting of twenty-five parameters). There are four mode scales measured by a 4 point Likert format (positive assertive, positive yielding, negative assertive, and negative yielding). Motivation for control includes a desire for control scale measured by a 7 point Likert format, mode satisfaction, parameter satisfaction, and mode by parameters change information. Agency (source) of a person's sense of control includes from self, from other (including family/friends; society/government; and God, higher power) (Shapiro, 1994).

DATA ANALYSIS. Raw scores were used for data analysis for all obtained variables with the exception of the MMPI in which transformed (T scores) were utilized (Marsha: correct for SCL 90; and Gottschalk/Gleser corrected for number of words spoken (1995) based on 100 words. Correlation matrices of Pearson Product Moment Correlations were computed for all bivariate correlations considered theoretically relevant to the authors. Dichotomous demographic information were dummy coded and all correlation analyses were performed utilizing the Crunch Version 4 computer program (Crunch Software Corporation, 1991). All tests were two-tailed; <p> was considered significant. Missing data were dealt with by utilizing the pairwise deletion method. Pairwise deletion results in the observation being used for all correlations where both variables are nonmissing.

RESULTS
Sense of Control and Depression. The first set of results in which we were primarily interested involved the relationship between sense of control measured by the SCI and depression, as measured by the MMPI scale 2, Beck Depression Inventory, SCL-90 Scale 4, and the Gottschalk/Glessner Content Analysis Depression Scale. Table One presents the data comparing the SCI with depression scales. As can be seen from

INSERT TABLE ONE ABOUT HERE

Table One, the higher the group's overall sense of control, the lower the depression. Further, the more the group reported a high positive assertive mode of control and a low negative yielding mode of control, the less their depression. On the other hand, the more satisfied they were with their modes of control, and the more they were able to gain a sense of control from others, the lower their depression.

Sense of Control and Anxiety. Table Two compared sense of control measured by the SCI data with anxiety measured by the SCL 90 anxiety and phobia scales, and the MMPI anxiety scale 7. As

INSERT TABLE TWO ABOUT HERE

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can be seen from Table Two, the greater the groups' sense of control and the higher their positive assertive mode of control, and the more they are satisfied with their modes, the lower their anxiety.

Sex Roles and Agency. Mode. Women were more likely than men to gain a positive sense of control from others ($r=.49, \ p=.03$); and men in this study were more likely to perceive themselves as
positive assertive than women \((r = - .46, \ p = .03)\)

**DISCUSSION**

The SCI sense of control scales showed consistency across inventories. High overall sense of control in the general and specific domain, high positive assertive and positive yielding modes of control are associated with decreased psychopathology in general and symptoms of depression and anxiety in particular.

In addition to giving group data, the SCI also can be utilized to obtain an individual control profile, as illustrated by a subject in our study in Figure One. This profile gives the clinician an overview of the client's concerns. For ease of interpretation, that descriptive information is presented in graphic form based on transforming the descriptive scores into standard scores (with a mean of 50 and a standard deviation of 10) based on a psychiatrically screened healthy normal cohort group (Shapiro, Potkin, et al., 1993; Shapiro, 1994). Any black lines which are in the gray area represent scores in a non-psychologically healthy direction. As can be seen from Figure One, this subject has a low overall sense of control (1.), and a low parameter satisfaction score (11.). Further, she has a high negative yielding score (8.) and a low self as source of control (13.). As such, she is a "classic" case for clinical intervention involving teaching more self-responsibility, and addressing feelings of passivity and helplessness. However, not every person in our study fits this profile. Some have high negative assertive (7.) and low other as source of control (14.) Therefore, not
every intervention teaching fighting spirit and self-responsibility is appropriate for every patient.

Clinical intervention may also wish to include, where appropriate, teaching of an accepting, yielding mode of control (cf. Gray and Doan, 1990; Carver, 1988; Linehan, 1993). As past research has shown, the positive assertive and positive yielding modes are not mutually exclusive (e.g., Shapiro, Friedman, & Piaget, 1991). Flexible coping (cf. Schwartz, 1995) is possible only when an individual has the skills of both modes of control, and can use them either in an integrated way, or differentially depending upon the exigencies of the circumstances. Such flexible coping may be important over time and situation in dealing with anxiety and depression.

The SCI Control Profile provides information not only about where domain and parameter specific concerns exist, but also helps guide the clinician as to the subject’s mode of control preference in addressing the concern. Based on an individual’s SCI control profile, subsequent, tailored control based interventions can be developed; and pilot efforts to demonstrate the effectiveness of those interventions for psychological wellbeing could be assessed. The development of individual-specific control profiles is a necessary step for being able to match specific psycho-social control-related interventions to the person.
### TABLE ONE: CONTROL PROFILE AND DEPRESSION SCALES

<table>
<thead>
<tr>
<th></th>
<th>BECK DEPRESSION</th>
<th>SCL 90 Depression</th>
<th>MMPI Depression</th>
<th>GOTTSCALK/ GLESSER Depression Scale 2</th>
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<td><strong>SENSE OF CONTROL</strong></td>
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<tr>
<td><strong>GENERAL DOMAIN</strong></td>
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<td></td>
</tr>
<tr>
<td>1. Overall</td>
<td>-.77****</td>
<td>-.76****</td>
<td>-.65***</td>
<td></td>
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<tr>
<td>2. Positive</td>
<td>-.66***</td>
<td>-.63***</td>
<td>-.62***</td>
<td></td>
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<tr>
<td>3. Negative</td>
<td>+.71****</td>
<td>.76****</td>
<td>.45*</td>
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<td><strong>DOMAIN SPECIFIC</strong></td>
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<tr>
<td>4. Overall</td>
<td>-.70****</td>
<td>-.65***</td>
<td>-.61***</td>
<td></td>
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<tr>
<td><strong>MODES OF CONTROL</strong></td>
<td></td>
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<tr>
<td>5. Positive Assertive</td>
<td>-.60***</td>
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<tr>
<td>6. Positive Yielding</td>
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<td>7. Negative Assertive</td>
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<tr>
<td>8. Negative Yielding</td>
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<td>9. Desire for Control</td>
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<td>10. Mode Satisfaction</td>
<td>-.68***</td>
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<td>11. Parameter Satisfaction</td>
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<td>-.53**</td>
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<tr>
<td>12. Change as Pref. Mode</td>
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<td><strong>AGENCY OF CONTROL</strong></td>
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<tr>
<td>13. Self as agent</td>
<td></td>
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<td></td>
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<tr>
<td>14. Other as agent</td>
<td>-.49*</td>
<td>-.43*</td>
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*p<.05  
**p<.01  
***p<.001  
****p<.0001
TABLE TWO: CONTROL PROFILE AND ANXIETY SCALES

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<tr>
<th></th>
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<tr>
<td>GENERAL DOMAIN</td>
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<tr>
<td>1. Overall</td>
<td>-.68***</td>
<td>-.65**</td>
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<tr>
<td>2. Positive</td>
<td>-.59**</td>
<td>-.59**</td>
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<tr>
<td>3. Negative</td>
<td>+.64**</td>
<td>.52*</td>
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<tr>
<td>4. Overall</td>
<td>-.52*</td>
<td>-.65***</td>
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**MODES OF CONTROL**
5. Positive Assertive - .60*** - .55** - .44**
6. Positive Yielding
7. Negative Assertive
8. Negative Yielding

**MOTIVATION FOR CONTROL**
9. Desire for Control
10. Mode Satisfaction - .54* - .56** - .60**
11. Parameter Satisfaction
12. Change as Pref. Mode

**AGENCY OF CONTROL**
13. Self as agent
14. Other as agent

* p < .05
** p < .01
*** p < .001
**** p < .0001
Figure 1. SCI CONTROL PROFILE

<table>
<thead>
<tr>
<th>Sense of Control</th>
<th>General Domain</th>
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<th>3. Negative</th>
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<table>
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<th>Specific Domains</th>
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<tr>
<td>11. Parameter Satisfaction</td>
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<td>12. Change as Preferred Response Mode</td>
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<th>Agency of Control</th>
<th>13. Self as Source</th>
<th>14. Other as Source</th>
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Supplemental Material 1

REFERENCES FOR THIS ARTICLE CAN BE FOUND IN THE PREVIOUS TWO ARTICLES (TWO AND THREE ABOVE) WITH THE FOLLOWING ADDITIONS, FOR THIS ARTICLE, WHICH ALSO ADDS

- THE BECK DEPRESSION INVENTORY,
- THE SCL-90-R,
- THE SHIPLELY INSTITUTE OF LIVING SCALE
I. Description & references for SCL-90-R, BDI, and Shipley

A. Shipley Institute of Living Scale - a brief measure of intellectual functioning which assesses verbal ability and abstract reasoning


B. SCL-90-R - 90-item version of the self-report inventory. All items are rated on a 5-point scale ranging from "0" (not at all) to "4" (extremely). Provides 9 subscales: Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoia, and Psychoticism, and a Global Symptom Index.


C. Beck Depression Inventory - a 21-item self-report measure used to assess depression in adults. Respondent chooses one of four statements (0-3) reflecting increasing levels of symptomatology.

Supplemental Material 2

Conceptual Analysis of Correlations between the SCI and

MMPI scales

Shipley Intelligence test

Beck Depression Inventory

SCL 90
This suggests the following:
-as overall sense of control increases, degree of F scale decrease and K scale increases
-as overall sense decreases, scale 2-depression sx s increase and scale 7(anxiety sx s) increase
-as overall sense decreases, scale 8(constellation of psychopathological sx s) increase
-as overall sense decreases, scale 10 (social introversion) increases

*all these patterns appear conceptually logical and meaningful

(b) C2: -.45K, -.62D, -.58(with scale 7), -.53(scale 8), -.43(10).

This suggests the following:
-as positive sense of control increases, K scale decreases (intuitively surprising!)
-as pos. sense increases, scale 2 depression sx s decrease (strong relationship), scale 7 anxiety sx s decrease, scale 8 constellation of sx s decreases and scale 10 social introversion decreases

Except for the first pattern (negative relationship between positive sense of control and K), the rest appear logical and meaningful.

(c) Scale 3: -.69(K), +.40(scale 1), +.46 (2), +.59(7), +.39(8), +.48(10).

-as negative sense of control increases, K decreases (strong and logical relationship)
-as neg. sense increases, scale 1 (health complaints) sx s increase, scale 2 (depression) sx s increase, scale 7 (anxiety) sx s increase, scale 8 (psychopathology) sx s increase and scale 10 (social introversion) sx s increase

*all these patterns appear logical and meaningful

(d) C4: -.58F, -.43(1), -.61(2), -.51(3), -.49(4), -.58(6), -.64(7), -.67(8), -.38(10)

-the higher the domain sense, the lower the F, the lower the scale 1, the lower the scale 2 (depression), the lower the scale 3 (hysteria-type of coping), the lower the scale 4 (antisocial), the lower the scale 6 (paranoia), the lower the scale 7 (anxiety), the lower the scale 8 (psychopathology), the lower the social introversion.

*all appear logical and meaningful.

(e) scale 5: -.41L, -.39F, -.51K, -.44(7), -.47(10)

-the higher the positive assertive, the lower the L (naivete), the lower the F (unusual thinking/behavior), the higher the K, the lower the scale 7 anxiety and the lower the social introversion (scale 10).

(f) scale 6: +.44K

-the higher the positive yielding, the higher the K

*note: both the positive assertive and positive yielding have moderate positive relationships with K (points to relationship with general level of coping ability).

(g) scale 7: none
(h) scale 8: +.47 scale 2
- the higher the negative yielding, the higher the depression (it is interesting that it only had a relationship with this one scale).

(i) scale 9: none
(j) scale 10: -.49F, -.52(D), -.50(3), -.49(4), -.57(6), -.60(7), -.62(8)

-the higher the mode satisfaction, the lower the F, the lower the depression scores, the lower the hysteria scores, the lower the scale 4 (antisocial), the lower the paranoia scores, the lower the anxiety scores and the lower the scale 8 scores.

* all appear logical and meaningful

(k) scale 11: none
(l) scale 12: -.45F, -.43scale 8

- the higher the change score, the higher the F and 8 constellation (Scales F and 8 are correlated in the MMPI-they share items-it is interesting that these two came up as the only ones significant).

(m) scale 13: -.45F, -.49scale 1, -.48scale 9

-the higher the self as agent, the lower the F, the lower the scale 1, the lower the mania

* this is an interesting pattern and it is hard to make sense out of.

(n) C14: -.49(2), +.43(9), -.40(10)

-the higher the other as agent, the lower the depression, the higher the mania, the lower the social introversion

* note that scale 9 has a negative relationship with self as agent and a positive relationship with other as agent (?)

Relationship between the Control Inventory and the Shipley Intelligence Test:

-very few significant correlations
-interpret the significant ones very cautiously
-the Shipley has relationships with scale 3/negative sense of control (+.40)?, and scale 8/negative yielding (-.51).

Relationship between the Control Inventory and Demographic Variables

-very few significant correlations
-interpret the significant ones cautiously
-scale 5 (positive assertive) has a relationship with age (+.47) and sex (-.47)
-scale 14 (other as agent) has a relationship with sex (+.49)

Relationship between the Control Inventory and the Beck Depression Inventory

Correlations: -.77 (between BDI and scale 1), -.66 (BDI/scale 2), +.71 (BDI/scale 3), -.70 (BDI/scale 4), -.60 (BDI/scale 5), -.68 (BDI/scale 10).
This suggests the following:

- As overall sense of control, positive sense of control, positive assertive, domain sense of control and mode satisfaction decrease, BDI scores increase
- As negative sense of control increases, BDI increases

* All these patterns are consistent with the premise that control constructs as tapped by the SCI have a strong relationship with depression scores as tapped by the BDI.
* SCI appears to have a moderately strong relationship with depression as indicated by correlations with MMPI scale 2, the BDI, certain Gottchalk depression scales (as will be indicated) and the SCL90 depression scale (as will be indicated).

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Relationship between the Control Inventory and the Gottchalk Experiment Scales

- very few significant correlations
- interpret the significant ones cautiously
- scale 14 of the SCI (other as agent) has a relationship with scale 3 of the Gottchalk (+.43 separate), (labelled separate by Dr. Stein-exact variable name and construct unknown), and scale 4/guilt (-.43)
- scale 9 of the SCI (desire for control) has a negative relationship with depression 6 scale (-.43)
- scale 11 of the SCI has a negative relationship with depression 4 of the Gottchalk

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Control Inventory and the SCL-90

(Please note that I only have the abbreviated variable names and not the underlying constructs that each scale of the SCL90 is supposed to measure. Therefore, my conclusions are fairly general-I believe that Marsha Stein could have this information)

(a) scale 1 of the SCI correlates significantly with the following:
   -.41(scale OC/2), -.76 (scale IS/3), -.79(dep/4), -.69(an/5), -.57(no/6), -.65(ph/7), -.65(pa/8), -.68(psy/9), -.68(gs/10), -.65(pst/12)

   * as overall sense decreases, sxs of the SCL-90 increase almost across the board. Scale 1 of the SCI does not correlate with scales 1 and 11 of the SCL90.

(b) Scale 2 of the SCI correlates with: -.62 IS/3, -.42 de/4, -.57 an/5, -.41 no/6, -.60 ph/7, -.48 pa/8, -.53 psy/9, -.56 gs/10, -.54 pst/12

(c) Scale 3 of the SCI correlates with: +.44 oc/2, +.76 is/3, +.80 de/4, +.64 an/5, +.66 no/6, +.53 ph/7, +.76pa/8, +.74 psy/9, +.68 gs/10, +.64 pst/12

   * regarding the previous two patterns, as positive sense of control decreases and negative sense of control increases, SCL90 sxs increase (logical and meaningful).
Conceptual Analysis of Correlations between the SCI and additional scales

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Pattern of Correlations between the SCI and the MMPI

(1) Tabulation of significant correlations for each scale.

SCI scale 1 significantly correlates with: F,K,2,7,8,10
SCI scale 2 significantly correlates with: F,2,7,8,10
SCI scale 3 significantly correlates with: K,2,7,8,10
SCI scale 4 significantly correlates with: F,1,2,3,4,6,7,8,10
SCI scale 5 significantly correlates with: L,F,K,7,10
SCI scale 6 significantly correlates with: K
SCI scale 7: none
SCI scale 8: significantly correlates with scale 2
SCI scale 9: none
SCI scale 10: significantly correlates with F,2,3,4,6,7,8
SCI scale 11: none
SCI scale 12: significantly correlates with F,8
SCI scale 13: significantly correlates with F,1,9
SCI scale 14: significantly correlates with: 2,9,10

(2) Frequency of significant correlations across all SCI scales.

(a) Validity scale F correlated with 7 of 14 SCI scales
(b) Validity scale K correlated with 4 of 14 SCI scales
(c) Validity scale L correlated with 1 of 14 scales.
(d) MMPI scale 1 correlated with 3 of 14 SCI scales
(e) MMPI scale 2 correlated with 7 of 14 SCI scales
(f) MMPI scale 3 correlated with 2 of 14 SCI scales
(g) MMPI scale 4 correlated with 2 of 14 scales
(h) MMPI scale 5 correlated with none.
(i) MMPI scale 6 correlated with 2 of 14 scales
(j) MMPI scale 7 correlated with 6 of 14 scales
(k) MMPI scale 8 correlated with 6 of 14 scales
(l) MMPI scale 9 correlated with 1 of 14 scales
(m) MMPI scale 10 correlated with 6 of 14 scales

General Pattern based on above information:
IN PARTICULAR, SCALES F,2,7,8 AND 10 CORRELATED WITH SIX OR MORE
SCI SCALES

This seems to indicate that the SCI is correlated with (a) scales that tap degree of
psychopathology (i.e., scale F and 8), (b) correlates with scales that assess sx's of
depression and anxiety (i.e., scales 2 and 7) and is correlated with social introversion
/social withdrawal

3. Analysis of whether correlations are logical from a conceptual standpoint.

(a) CI/MMPI correlations (strength and direction):

- .48 (with F), +.49 (with K), -.65 (with D), -.65 (with scale 7), -.55 (with scale 8), -.51
(with scale 10).
(d) scale 4 SCI correlates with: -.65 is/3, -.73 de/4, -.52 an/5, -.50 no/6, -.55 ph/7, -.45 pa/8, -.60 psy/9, -.65 gs/10

- As domain specific sense decreases, sx's of the SCL90 increase

(e) Scale 5 correlates with: -.54 is/3, -.53 de/4, -.46 no/6, -.48 pa/8, -.60 psy/9, -.44 gs/10

- As positive assertiveness decreases, sx's increase

(f) Scale 6 correlates with: -.45 oc/2, -.56 no/6, -.41 psy/9

* As positive yielding decreases, symptoms increase

(g) Scale 7: none
(h) scale 8: none
(i) scale 9: none
(j) scale 10: -.65 is/3, -.75 de/4, -.54 an/5, -.46 no/6, -.56 ph/7, -.42 pa/8, -.62 psy/9, -.60 gs/10

- The lower the mode satisfaction, sx's increase

(k) scale 11: none
(l) scale 12 correlates with: -.44 oc/2

(m) scale 13 correlates with: -.74 no/6, -.53 pa/8, -.54 psy/9, -.44 gs/10

- The lower the self as agent, the higher the sx's but only in specific categories

(n) scale 14: none

OVERALL PATTERN OF RESULTS:

* Across all tests, the SCI appears to correlate with degree of psychopathology in general and symptomatology (particularly sx's of depression and anxiety).

* The present findings (with only a few exceptions) are very consistent with the underlying conceptual basis of the SCI (i.e., that is the positive assertive/positive yielding modes are the most healthy etc...).

Future research idea

Second, I also have a suggestion about the MMPI data. I think it would be a good idea to look at abnormal elevations on MMPI scales and compare the SCI scores of normal versus elevated MMPI. One possibility would be to calculate Goldberg Index and compare SCI scores of neurotics versus psychotics. With the correlational analysis you are including many normal readings from each scale. It would also be interesting to look at each individual's high points and see if they have special SCI scores. This would be useful if we have homogeneous group of diagnosis.

Best Regards,

Ellie Nezami

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DATA ANALYSIS AND RESULTS

Assumptions regarding data analysis.

Although the content analysis of the Gottschalk/Glesser samples normally do not involve dyadic interaction, these verbal samples did (occurring between the therapist and the patient). This was felt ethically necessary since it was the initial interview session for the patient. However, since data analysis involved a correlational comparison within subject between the Gottschalk/Glesser anxiety and hostility scales, and the Shapiro Control Scales, it was assumed this variation would not have an effect (Gottschalk, Personal Communication, June, 1987).

A second assumption on the Shapiro Control Scale was that the species category represented discrete intervals, and therefore could be weighted (and averaged). No weighted average was given to the agent and object of control, and only frequency counts were made.

Computation Rules for Shapiro Control Scale.

The detailed rules for scoring, as noted, have been cited elsewhere (Shapiro and Bates, Note 2). However, two small notes need to be cited here: the term overcontrol (too jealous, too possessive, etc) was coded as having control, assertive, negative; and desire to let go of control was coded as desire for control, yielding, positive (rather than losing control yieldingi positive).