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DEVELOPMENT OF THE
UNIVERSITY OF RHODE ISLAND CHANGE ASSESSMENT (URICA) SCALE:
A DEVICE FOR THE MEASUREMENT OF
STAGES OF CHANGE
BY
EILEEN A. MCCONNAUGHY

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS
IN
PSYCHOLOGY

UNIVERSITY OF RHODE ISLAND

1981

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Abstract

The majority of psychotherapy outcome studies have failed to adequately demonstrate the superiority of one theoretical orientation over another consistently across types of problems. A "transtheoretical" model was developed as a synthesis of the therapeutic change processes. An important finding of research on the transtheoretical model was the presence of a temporal dimension associated with the change processes. The present study developed an instrument to measure the temporal component, or "stages of change." An initial pool of 125 items was reduced to a final test of 32 items on the basis of principal components analysis, Chronbach's coefficient alpha, and item analysis results. One of the five initial theoretical stages was eliminated based on the analyses. The resulting four stages are represented by high loadings on four distinct components. Fifty-eight percent of the total variance is accounted for by these four components. Chronbach's coefficient alphas for the four scales range from .88 to .89. A cluster analysis was performed on the scores for each subject on each of the four scales. The resulting 18-cluster solution produced 7 major and 2 minor client profiles that are highly distinct. Future studies could

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use these client profiles to make predictions about which processes of change are most appropriate for particular clients.

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PREFACE

This thesis is prepared according to the "Manuscript Thesis Plan." The main body of the thesis will be submitted for publication with co-authors Dr. James Prochaska and Dr. Wayne Velicer. Due to its aim for publication, the body of the thesis is written in succinct form. Appendices, which add supplementary information, have been included in the thesis. However, these appendices will be removed when the article is submitted for publication.

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Development of the
University of Rhode Island Change Assessment (URICA) Scale:
A Device for the Measurement of
Stages of Change

A survey of 350 psychotherapy outcome studies has indicated the need for a more systematic and objective approach to therapeutic change processes (Prochaska, 1979). Concern over fragmentation in the field has led to encouragements for rapprochement (Goldfried, 1980): Prochaska offers a "transtheoretical" model as a solution. The model assumes that the many theories of psychotherapy can be synthesized and represented by five basic processes of change.

The efficacy of the Prochaska model was first stated in a study of smoking cessation and maintenance (Prochaska & DiClemente, in press). An important finding of a pilot project for the Prochaska and DiClemente study (DiClemente & Prochaska, in press) was the presence of a temporal dimension associated with the change processes. Subjects discussed their use of the processes in terms of time periods similar to those described by Horn (1972; 1976). Four stages of change associated with the modification of

health-related behavior were hypothesized by Horn: contemplating change, deciding to change, short-term change, and long-term change. For the purposes of their study, Prochaska and DiClemente (in press) delineated four stages considered important in smoking cessation and maintenance: (1) thinking about change (contemplation); (2) becoming determined to change (decision making); (3) actively modifying behavior and/or environment (active change); (4) maintaining new behaviors (maintenance). Distinctive, consecutive stages of change were reported by subjects. These stages interacted with the processes of change in the cessation of smoking behavior.

The separate stages have been examined in depth by other authors. Decision making is explored by Janis and Mann (1977). They delineate five stages that for them comprise decision making, and in these stages include contemplating and commitment behaviors. Maintenance of behavior change is viewed by Marlatt and Gordon (1979) as a distinct treatment entity. According to these authors, specific skills (e.g., desensitization, relaxation training, practicing new behaviors) can be acquired that will assist in the maintenance of desired behaviors.

Active change hasn't been described in the psychology

literature as a distinct phenomenon. This is interesting in view of the fact that it is during this stage that psychotherapy is assumed to make the most headway in the direction of the desired change. A plausible reason for this is that therapy and active change are thought to be synonymous.

A measure that seems to be related to the stages of change was developed by Heilbrun and Sullivan (1962). The Counseling-Readiness Scale (CRs) was devised to predict premature termination of therapy. The scale was shown to discriminate reliably between males ($t=2.64$ for 84 df; $p < .005$, one tailed) who failed to appear for an interview and those who had more than the usual number of interviews. The female CRs, however, provided a nonsignificant difference ($t=1.28$ for 30 df; $0.10 < p < 0.15$, one tailed) in the predicted direction. A further study revealed that the product-moment correlation between the CRs and number of psychotherapeutic interviews for the V.A. mental hygiene clinic patients was $.34$ ($p < .05$) (Heilbrun, 1966). The author suggests that the limited magnitude of the obtained correlation requires that the instrument be used with caution. Though slightly similar in concept to the stage

theory, the CRs isn't based on the transtheoretical perspective; it simply demonstrates readiness or lack of readiness to participate in therapy.

Frequently, the various stages of change are viewed in isolation; a synthesis of the stages is needed. The stages can be viewed along a dimension in which progression is not necessarily successive, unidirectional, or inclusive; no rigid continuum needs to be assumed. In the present study, a rational scale has been developed which operationally defines the stages of change. While such a scale can be used to assess readiness for change, its scope can be broader. Once a client's stage of change is discerned by this scale, the appropriate process of change (Prochaska & DiClemente, in press) can be matched to it, yielding a more systematic, more scientific approach to psychotherapy.

In the present study, the four stages originally discussed by Prochaska and DiClemente (in press) have been expanded to five stages. A pre-contemplation stage has been added. The stages are conceptually defined as:

1. PRE-CONTEMPLATION. The person is presenting for therapy but doesn't think s/he has a problem or knows s/he doesn't want to change; may feel pressured by others to be there; may admit to having a problem, but has no desire to

change. S/he is either not aware of or is ignoring the problem.

2. CONTEMPLATION. The person is beginning to be aware that a problem exists or that s/he is bothered by something about him/herself. S/he is struggling to understand the problem (i.e., cause, solution); is seeking more information; but hasn't made a commitment to change.

3. DECISION MAKING. The person has decided s/he is ready to change; has committed him/herself; is willing to pay the price (i.e., money, time, effort, discomfort); is ready to take responsibility; but hasn't started working on the problem (i.e., hasn't begun to change the problem behavior or environment).

4. ACTIVE CHANGE. The person has actively started to change the behavior or the environment; is struggling to change; hasn't been very successful on his/her own and needs help. S/he hasn't attained the desired change.

5. MAINTENANCE. The person has already changed and made significant gains but is either slipping or coming in to prevent a relapse. S/he might have found it difficult to maintain the changes (i.e., new behaviors, new attitudes) on his/her own, and is therefore seeking help. S/he has already attained the desired change and is still

better off than s/he was initially.

In actuality, these stages are not fixed and unidirectional. However, it is the intent of the present study to depict the stages as distinct and consecutive as a useful framework for the purpose of measurement.

METHOD

Subjects

Subjects were 155 adult outpatients coming to a community facility, private therapist, military counseling center, or university campus counseling center for treatment. The questionnaire was distributed over a period of six months to all clients at the time of their first visit; the form was to be taken home and returned before the third session. Subjects included in the study were those who returned the completed questionnaire to their clinic or therapist.

In this sample, there were 99 females, whose ages ranged from 18 to 64, with a mean age of 32. The 53 males in the study were between the ages of 18 and 55, with a mean age of 33. Three subjects did not indicate their sex on the questionnaire. It is not surprising that the majority of the subjects were female (64%), since outpatient client populations in general tend to be primarily

female (Brown & Kosterlitz, 1964; Gurin, Veoff, & Field, 1960).

Procedure

A rational scale, as described by Edwards (1970), was devised to measure the hypothesized five stages of change. The scale is called the University of Rhode Island Change Assessment (URICA) Scale.

Generating the Items. For the five stages, a total of 165 items were generated. The theoretical base of the stages of change (Prochaska & DiClemente, in press) provided the behavioral definitions from which the items were derived. A likert-type, 5-point-scale format was used. (See Appendix A.)

Inter-rater Reliability. The 165 items were given to three judges: graduate students in psychology who were familiar with the stage theory. The 165 items and conceptual definitions were given to each of the judges. They were asked to indicate which stage each item matched. Only those items on which there was 100% agreement among all three judges were retained. Out of the total 165 items rated, 145 had 100% agreement. From the 145 good items, 125 items were retained for the instrument.

Analysis of the Questionnaire. The original form of

the questionnaire consisted of 125 items with 25 items defining each of the five stages. The purpose of the initial analysis was to eliminate items. This resulted in a short, reliable questionnaire measuring the stages. The analysis involved three steps: the reduction of the questionnaire to a 75-item version with 15 items per stage, a second reduction to a 50-item questionnaire with 10 items per stage, and a third reduction to a 32-item version with eight items for each of four stages. One of the initial theoretical stages (Decision Making) was eliminated at the second step of the analysis. Nine of its 10 items loaded on both component 4 (Contemplation) and component 3 (Active Change). It was therefore decided that Decision Making was not measuring a separate, distinct stage.

At each step in the analysis, three separate types of information were employed as the basis for item deletion. (a) A principal components analysis was performed on the matrix of inter-item correlations. The number of components examined was determined by two different procedures: the theoretically defined number, five and the number indicated by the Minimum Average Partial procedure (Velicer, 1976). (See Appendix B for the 125-item an-

alysis.) Both Varimax and oblique rotations were performed. The two patterns agreed, but the Varimax rotation tends to yield more clearly separated components. Because maximum separation was desired, results for the Varimax rotation were interpreted. (b) The correlation between each item and the total score for all items theoretically measuring that stage was obtained. (c) The value of coefficient alpha for the items theoretically measuring each stage with and without a particular item included was examined. The results are reported in detail for the 32-item version of the questionnaire.

RESULTS

A principal components analysis was performed on the 32x32 matrix of inter-item correlations. The first eight items were all Pre-Contemplation items, and all loaded heavily on component 2. No other items loaded on component 2. The next eight items were all Contemplation items; all of these eight items and no other items had a high loading on component 4. The next eight items were all Active Change items, and all loaded heavily on component 3. No other items loaded on component 3. The last eight items all had a high loading on component 1. All were Maintenance items with no other items loading on component

1. These four components account for 58% of the variance. The principal components analysis loadings for the final 32 items are shown in Table 1.

The 32-item pool (eight items per stage) was analyzed for internal consistency. The following coefficient alphas were determined for each of the scales: Pre-Contemplation, .88; Contemplation, .88; Active Change, .89; and Maintenance, .88. Item analysis correlations for each of the 32 items were performed, and are shown in Table 2.

Scores were calculated for each subject on each of the four scales. The scores are the sum of each of eight items forming the individual scales. The means and standard deviations were calculated (see Table 3); these scores were converted to standardized T scores ($M=50, SD=10$) for interpretation. These standard scale scores are ordinary standard scores.

Cluster Analysis

A second analysis determined whether the initial heterogeneous pool of subjects could be classified into a small number of cohesive subgroups. A hierarchical clustering procedure (Johnson, 1967) was employed. This procedure calculates the Euclidean distance between each cluster and combines clusters that have the smallest distance at each

Table 1
Varimax Rotated Component Patterns
for the Final Thirty-two Items

Item Number	Component 1	Component 2	Component 3	Component 4
1		.70		
5		.77		
11		.75		
13		.71		
23		.69		
26		.74		
29		.72		
31		.69		
2				.54
4				.69
8				.63
12				.71
15				.72
19				.70
21				.74
24				.65

Table 1 (continued)

Item Number	Component 1	Component 2	Component 3	Component 4
3			.79	
7			.69	
10			.62	
14			.70	
17			.71	
20			.61	
25			.76	
30			.77	
6	.76			
9	.67			
16	.76			
18	.82			
22	.58			
27	.73			
28	.75			
32	.68			

Note. Values below .40 are eliminated.

Table 2
Final Eight Items Retained
for Each of the Four Scales

Item Number	Item	Item Analysis
Scale I. Pre-Contemplation		
1.	As far as I'm concerned, I don't have any problems that need changing.	.71
5.	I'm not the problem one. It doesn't make much sense for me to be here.	.76
11.	Being here is pretty much of a waste of time for me because the problem doesn't have to do with me.	.77
13.	I guess I have faults, but there's nothing that I really need to change.	.74
23.	I may be part of the problem, but I don't really think I am.	.73
26.	All this talk about psychology is boring. Why can't people just forget about their problems?	.74
29.	I have worries but so does the next guy. Why spend time thinking about them?	.74
31.	I would rather cope with my faults than try to to change them.	.74

Table 2 (continued)

Item Number	Item	Item Analysis
Scale II. Contemplation		
2.	I think I might be ready for some self-improvement.	.64
4.	It might be worthwhile to work on my problem.	.75
8.	I've been thinking that I might want to change something about myself.	.71
12.	I'm hoping this place will help me to better understand myself.	.81
15.	I have a problem and I really think I should work on it.	.79
19.	I wish I had more ideas on how to solve my problem.	.70
21.	Maybe this place will be able to help me.	.79
24.	I hope that someone here will have some good advice for me.	.69
Scale III. Active Change		
3.	I am doing something about the problems that had been bothering me.	.74
7.	I am finally doing some work on my problem.	.77

Table 2 (continued)

Item Number	Item	Item Analysis
Scale III. Active Change (continued)		
10.	At times my problem is difficult, but I'm working on it.	.71
14.	I am really working hard to change.	.76
17.	Even though I'm not always successful in changing, I am at least working on my problem.	.78
20.	I have started working on my problems but I would like help.	.75
25.	Anyone can talk about changing; I'm actually doing something about it.	.78
30.	I am actively working on my problem.	.79
Scale IV. Maintenance		
6.	It worries me that I might slip back on a problem I have already changed, so I am here to seek help.	.79
9.	I have been successful in working on my problem but I'm not sure I can keep up the effort on my own.	.72

Table 2 (continued)

Item Number	Item	Item Analysis
Scale IV. Maintenance (continued)		
16.	I'm not following through with what I had already changed as well as I had hoped, and I'm here to prevent a relapse of the problem.	.78
18.	I thought once I had resolved the problem I would be free of it, but sometimes I still find myself struggling with it.	.79
22.	I may need a boost right now to help me maintain the changes I've already made.	.69
27.	I'm here to prevent myself from having a relapse of my problem.	.78
28.	It is frustrating, but I feel I might be having a recurrence of a problem I thought I had resolved.	.74
32.	After all I had done to try and change my problem, every now and again it comes back to haunt me.	.72

Table 3
Means, Standard Deviations,
and Pearson Correlation Coefficients
for the Four Scales

Scale	Mean	Standard Deviation	Pearson Correlation Coefficient		
			PC	C	AC
Pre-Contemplation(PC)	4.408	.698	-	-	-
Contemplation(C)	1.743	.513	-.45	-	-
Active Change(AC)	2.080	.643	-.16	.53	-
Maintenance(M)	2.657	.830	.05	.27	.38

stage. The procedure starts with each subject forming a cluster and continues until all subjects form a single cluster. Solutions were investigated for 13 to 18 clusters. The solution for 18 clusters (see Appendix C) was the most clearly interpretable and will be discussed in detail.

Interpretation of Profiles. The cluster analysis resulted in a total of 18 distinct clusters. Seven of the clusters were classified as major clusters, each involving 13 to 27 subjects. In addition, there were two minor clusters, each involving five or six subjects, but also yielding highly distinct profiles. These nine clusters together accounted for 140 of the total of 155 subjects. The remaining nine clusters consisted of only one to three subjects and were therefore considered uninterpretable.

Major Clusters

Cluster 1. The twenty subjects in this cluster (Figure 1) are characterized by a profile of below average scores on Pre-Contemplation and Maintenance, and above average scores on Contemplation and Active Change. All scores are standardized to T scores. An above average score indicates endorsement. These subjects can be viewed as decision makers. Their profile captures the transition

described by a Decision Making position: they are still contemplating about their problem and yet they have begun to take some action. Thus, while Decision Making didn't emerge as a separate component, it is a typical profile. This cluster, then, is called the "Decision Making" profile.

Cluster 2. The twenty-seven subjects in this cluster (Figure 2) are about average on three of the scales (Pre-Contemplation, Contemplation, and Active Change), and above average on Maintenance. Subjects with this profile are maintaining previous behaviors, and tend not to be involved in rethinking or taking new action in the problem area. The Maintenance stage is represented by this profile.

Cluster 3. Thirteen subjects appeared in this cluster (Figure 3); they are below average on the Pre-Contemplation scale and above average on Contemplation, Active Change, and Maintenance. These subjects are not ignoring the presence of a problem; rather they are engaged in thinking about the problem, taking some action on changing it, and maintaining changes already made. This cluster is labeled the "Participation" profile.

Cluster 4. The twenty-seven subjects in this cluster (Figure 4) are described by a profile that is a less pro-

nounced version of Cluster 3. These subjects are slightly above average on Contemplation, Active Change, and Maintenance. They are somewhat involved in thinking about, acting on, and maintaining changes; and tend not to ignore the existence of the problem. This group of subjects is characterized by a "Pre-Participation" profile.

Cluster 5. Fourteen subjects appeared in this cluster (Figure 5); they are about average on Pre-Contemplation and Active Change, and below average on Contemplation and Maintenance. These subjects are not thinking about changing, nor are they maintaining any changes they may have made previously. This cluster is labeled the "Passive Action" profile.

Cluster 6. The thirteen subjects in this cluster (Figure 6) are about average on Pre-Contemplation and Maintenance; and are below average on Active Change, and slightly below average on Contemplation. These subjects are not contemplating change, nor are they engaged in changing; rather they are maintaining the status quo. This cluster is called the "Maintenance Through Denial" profile.

Cluster 7. This group of fifteen subjects (Figure 7) is characterized by about average scores on Pre-Contem-

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plation and Contemplation, and below average scores on Active Change and Maintenance. These subjects demonstrate the lack of an action component to their profile. Meanwhile, they are not ignoring (nor are they thinking about) their problem. An "Uninvolved" profile describes this cluster of subjects.

Minor Clusters

Cluster 8. The five subjects in this cluster (Figure 8) are described by a profile in which Pre-Contemplation scores are close to average, Contemplation is slightly below average, Maintenance is below average, and Active Change is extremely below average. Subjects in this cluster seem to be reluctant to take action on a problem. This group of subjects is characterized by a "Reluctance" profile.

Cluster 9. Six subjects appeared in this cluster (Figure 9), which describes them as being well above average on Pre-Contemplation, below average on Contemplation, above average on Active Change, and about average on Maintenance. Subjects in this cluster could be characterized as taking action while not acknowledging that a problem exists. This cluster is labeled the "Non-Reflective Action" profile.

DISCUSSION

Statistical analyses of the University of Rhode Island Change Assessment Scale data lend support to the stage theory. Hypothesized were five stages of change. Four distinct, reliable stages emerged on the basis of the principal components analysis, Chronbach's coefficient alpha, and item analysis results. One of the initial theoretical stages (Decision Making) was found to measure aspects of two of the other stages (Contemplation and Active Change). This finding was not surprising, as there had been some initial concern that it would be difficult to capture clients at this transitional stage. Decision Making was eliminated as a separate stage as a result of this finding. The four resulting stages of change are now operationalized by the University of Rhode Island Change Assessment Scale.

The cluster analysis yielded nine distinct client profiles which represent 90% of the total 155 subjects. These profiles give a clearer picture of clients who complete the measure. Rather than simply locating in one stage or another, clients show patterns of differential involvement in all the stages. Several of the major clusters were readily interpretable, for example, "Maintenance,"

"Uninvolved," and "Maintenance Through Denial." However, the other profiles, especially those that are high or low on two or more stages, need considerably more study before it is clear as to what the client is experiencing and doing. The stages, as viewed through the profiles, don't emerge as discreet and successive. This finding is as predicted. Most clients seem to be simultaneously involved in aspects of more than one stage. Frequently clients will be high or low on two or more adjacent stages, for example, "Decision Making" profile, "Participation" profile, and "Maintenance Through Denial" profile. Pearson correlation coefficient results illustrate the close relationship that the adjacent stages have: correlations that are .38 or greater. Interestingly, Pre-Contemplation and Contemplation have a high negative correlation. The theory states that Pre-Contemplation behaviors involve avoiding the problem, while Contemplation behaviors involve thinking about the problem. Thus, these opposite theoretical constructs are in fact measured by items that are highly negatively correlated.

Future studies could use these client profiles to make predictions as to which processes of change are most appropriate for particular clients. The instrument might

be used to test another question: Does the client's stage of change affect success in psychotherapy? Further speculations involve family and couple systems. If one member of a system is ready to take action on the problem area, while another member hasn't accepted that there is a problem, therapy outcome could be affected. By matching the client's stage profile with the appropriate process of change, success in psychotherapy may be optimized.

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Appendix A

Original One Hundred Twenty-five-Item Questionnaire

UNIVERSITY OF RHODE ISLAND CHANGE ASSESSMENT (URICA) SCALE

Name _____ Problem _____

Date _____ Initials of Interviewer _____

This questionnaire is to help us improve our services. Each statement describes how a person might feel when starting therapy. Please indicate the extent to which you tend to agree or disagree with each statement. In each case, make your choice in terms of how you feel right now, not what you have felt in the past or would like to feel. For all the statements that refer to your "problem", answer in terms of the problem you have written at the top. An "here" refers to the treatment center.

There are FIVE possible responses to each of the items in the questionnaire:

- 1 - Strongly Agree (SA)
- 2 - Agree (A)
- 3 - Undecided (U)
- 4 - Disagree (D)
- 5 - Strongly Disagree (SD)

Put an "X" over the number that best describes how much you agree or disagree with each statement.

There are FIVE possible responses: <u>SA</u> <u>A</u> <u>U</u> <u>D</u> <u>SD</u>					
1. Things could be going better in my life and there are ways I might like to improve them.	1	2	3	4	5
2. There are things I do which have bothered me for awhile and I am finally doing something about them.		2	3	4	5
3. I have made great strides but am afraid of slipping back.	1	2	3	4	5
4. I am here because of someone else's problem.	1	2	3	4	5
5. I have been able to change something about myself but I think I may not be able to keep up the gains.	1	2	3	4	5
6. It is important to me to change and so I've decided I will do it.	1	2	3	4	5

	<u>SA</u>	<u>A</u>	<u>U</u>	<u>D</u>	<u>SD</u>
7. There are things I do that I am unhappy with, which I am going to change.	1	2	3	4	5
8. I feel dissatisfied with my life but can't quite put my finger on the reasons for this.	1	2	3	4	5
9. I don't know why I am here.	1	2	3	4	5
10. I basically feel good about myself and I don't want to lose what I have gained.	1	2	3	4	5
11. Working on my problem is requiring a lot of energy.	1	2	3	4	5
12. I am here to make someone else happy.	1	2	3	4	5
13. I am actively working to change my problem.	1	2	3	4	5
14. There is an area of my life that I am going to work on.	1	2	3	4	5
15. I'd like to get help now so that I don't have a relapse of my problem.	1	2	3	4	5
16. I wish other people would just accept me the way I am.	1	2	3	4	5
17. I wish I had more information about solving my problem.	1	2	3	4	5
18. Even though I feel confused about my life at times, I am going to do something to improve it.	1	2	3	4	5
19. I really feel a need to better understand my problems before I can do anything more about them.	1	2	3	4	5
20. I really feel pressured to be here.	1	2	3	4	5
21. After thinking over all the angles, I have decided I now will act.	1	2	3	4	5

	<u>SA</u>	<u>A</u>	<u>U</u>	<u>D</u>	<u>SD</u>
22. I am finally tackling a problem that has bothered me for awhile.	1	2	3	4	5
23. In the expression, "Two steps forward, one step back", I feel that right now I might be stepping back.	1	2	3	4	5
24. I really have to struggle to keep from losing the gains I have made.	1	2	3	4	5
25. As far as I'm concerned, I don't have any problems that need changing.	1	2	3	4	5
26. I think I might be ready for some self-improvement.	1	2	3	4	5
27. It might be worthwhile to work on my problem.	1	2	3	4	5
28. I am really committed to working hard in therapy to solve my problems.	1	2	3	4	5
29. I am doing something about the problems that had been bothering me.	1	2	3	4	5
30. I thought I had the problem licked, but sometimes I fear I will be right back where I started.	1	2	3	4	5
31. I really prefer not to think about my problems.	1	2	3	4	5
32. Other people say I have faults, but I think I'm okay.	1	2	3	4	5
33. Everything would run much smoother if someone else would just straighten out.	1	2	3	4	5
34. Things aren't going so well lately and I'm not sure why.	1	2	3	4	5
35. It is time for me to take responsibility for my problem. I feel committed to start working on it.	1	2	3	4	5
36. I am at the end of my rope concerning my problem. I've already started working to change it.	1	2	3	4	5

	<u>SA</u>	<u>A</u>	<u>U</u>	<u>D</u>	<u>SD</u>
37. I'm not the problem one. It doesn't make much sense for me to be here.	1	2	3	4	5
38. It worries me that I might slip back on a problem I have already changed, so I am here to seek help.	1	2	3	4	5
39. I have been successful in working on my problem but I'm not sure I can keep up the effort on my own.	1	2	3	4	5
40. I'm really fed up with my old way of being. I'm glad I'm doing something to change.	1	2	3	4	5
41. I will work on my problem.	1	2	3	4	5
42. I've been thinking that I might want to change something about myself.	1	2	3	4	5
43. I'll come in if it will help someone else out, even though I'm not the one having problems.	1	2	3	4	5
44. There might be something I could do to improve my life, but at this point I don't know what.	1	2	3	4	5
45. I am finally doing some work on my problem.	1	2	3	4	5
46. Even though I've already worked hard to change my problem, I may need some help to keep from losing ground.	1	2	3	4	5
47. I've decided to do something about my problem.	1	2	3	4	5
48. Talk is cheap. I am going to act.	1	2	3	4	5
49. I think that things could change but I don't have the solution at hand.	1	2	3	4	5
50. I have no interest in changing.	1	2	3	4	5
51. I'm doing a lot of hard work on my problem right now.	1	2	3	4	5

	<u>SA</u>	<u>A</u>	<u>U</u>	<u>D</u>	<u>SD</u>
52. My problem might be one that I could do something about.	1	2	3	4	5
53. Sometimes it takes a lot of effort to work on my problem.	1	2	3	4	5
54. I'm just beginning to think about my problem.	1	2	3	4	5
55. I plan to do something about my problem.	1	2	3	4	5
56. At some point I will work on my problem.	1	2	3	4	5
57. I'm afraid that after all my work I'll be right back where I started with my problem.	1	2	3	4	5
58. At times my problem is difficult, but I'm working on it.	1	2	3	4	5
59. I thought that once I had already changed I could forget about my problem, but that doesn't seem to be the case.	1	2	3	4	5
60. I hope someone understands my problem more than I do.	1	2	3	4	5
61. Being here is pretty much of a waste of time for me because the problem doesn't have to do with me.	1	2	3	4	5
62. I have changed something about myself but at times I find myself struggling with the same old thing.	1	2	3	4	5
63. Sometimes I feel I am back where I started as far as my problem is concerned.	1	2	3	4	5
64. I've begun to change, but I still need help.	1	2	3	4	5
65. I would like to get some relief from my problem, so I'm going to do something about it.	1	2	3	4	5

		<u>SA</u>	<u>A</u>	<u>U</u>	<u>D</u>	<u>SD</u>
66.	My problem is one that I feel committed to changing.	1	2	3	4	5
67.	I'm ready to get started working on my problem.	1	2	3	4	5
68.	Someone else has pushed me into coming here.	1	2	3	4	5
69.	I'm hoping this place will help me to better understand myself.	1	2	3	4	5
70.	Since I have already done a lot of work on my problem, I am hoping that a professional can help me not to lose any ground.	1	2	3	4	5
71.	The work I am doing on my problem gets rough at times.	1	2	3	4	5
72.	If it were up to me, I wouldn't be here right now.	1	2	3	4	5
73.	Maybe this place will be able to help me.	1	2	3	4	5
74.	I've got my problems but I've learned to live with them.	1	2	3	4	5
75.	I've thought for awhile now that some day I'm really going to do something about my problem.	1	2	3	4	5
76.	I guess sometimes I need professional help so that I can maintain the changes I've already made.	1	2	3	4	5
77.	I am really working hard to change.	1	2	3	4	5
78.	I deserve credit for trying so hard to work on my problem.	1	2	3	4	5
79.	I have procrastinated long enough. Now is the time to act.	1	2	3	4	5
80.	I'm confused about whether I have a problem or not.	1	2	3	4	5

		<u>SA</u>	<u>A</u>	<u>U</u>	<u>D</u>	<u>SD</u>
81.	I'm tired of struggling with my problem after I thought I had already changed.	1	2	3	4	5
82.	I guess I have faults, but there's nothing that I really need to change.	1	2	3	4	5
83.	I'm not sure I have the ability to work on my problem.	1	2	3	4	5
84.	I have a problem and I really think I should work on it.	1	2	3	4	5
85.	I wish I had more ideas on how to solve my problem.	1	2	3	4	5
86.	I think it would be a good idea to make some changes in my life, so I've decided to try.	1	2	3	4	5
87.	I feel committed to working on my problem.	1	2	3	4	5
88.	I thought I'd resolved my problem, but there seems to be an area I'm still having difficulty with.	1	2	3	4	5
89.	Someone else complains about my behavior, but I really can't see what their beef is.	1	2	3	4	5
90.	Even though I'm not always successful in changing, I am at least working on my problem.	1	2	3	4	5
91.	Sometimes I am finding it hard to try to change my problem.	1	2	3	4	5
92.	I haven't as yet started working on my problem, but I am committed to doing so.	1	2	3	4	5
93.	I hope this place will have some ideas on how to solve my problem.	1	2	3	4	5
94.	I'm not following through with what I had already changed as well as I had hoped, and I'm here to prevent a relapse of the problem.	1	2	3	4	5

	<u>SA</u>	<u>A</u>	<u>U</u>	<u>D</u>	<u>SD</u>
95. I thought once I had resolved the problem I would be free of it, but sometimes I still find myself struggling with it.	1	2	3	4	5
96. No one is perfect so why should I worry about changing.	1	2	3	4	5
97. I have started working on my problems but I would like help.	1	2	3	4	5
98. Sometimes I find it a lot of work to change.	1	2	3	4	5
99. I want to change and I am willing to pay the price in terms of time and effort.	1	2	3	4	5
100. Maybe this place will be able to help me.	1	2	3	4	5
101. It's depressing to think about problems so I try not to think about them.	1	2	3	4	5
102. I may need a boost right now to help me maintain the changes I've already made.	1	2	3	4	5
103. The work I'm doing to change is difficult at times.	1	2	3	4	5
104. I am ready to start changing my problem.	1	2	3	4	5
105. Anyone can talk about changing; I'm actually doing something about it.	1	2	3	4	5
106. I hope that someone here will have some good advice for me.	1	2	3	4	5
107. I am ready to take responsibility to change my problem.	1	2	3	4	5
108. Everyone has faults and I guess I do too. It's just that mine aren't serious enough to call them a problem.	1	2	3	4	5
109. I may be part of the problem, but I don't really think I am.	1	2	3	4	5
110. I'm here to prevent myself from having a relapse of my problem.	1	2	3	4	5

	<u>SA</u>	<u>A</u>	<u>U</u>	<u>D</u>	<u>SD</u>
111. I am struggling to change.	1	2	3	4	5
112. I don't have a very good understanding of my problem.	1	2	3	4	5
113. All this talk about psychology is boring. Why can't people just forget about their problems?	1	2	3	4	5
114. I am highly motivated to start changing.	1	2	3	4	5
115. I want to change and feel ready to do so.	1	2	3	4	5
116. I want to get help so that I can prevent a recurrence of this problem.	1	2	3	4	5
117. My problem might be one that I could tackle.	1	2	3	4	5
118. I am actively working on my problem.	1	2	3	4	5
119. I've been doing as much as I can on my own, but I need help to keep working on my problem.	1	2	3	4	5
120. I have worries but so does the next guy. Why spend time thinking about them?	1	2	3	4	5
121. I want to change and feel ready to do so.	1	2	3	4	5
122. It is frustrating, but I feel I might be having a recurrence of a problem I thought I had resolved.	1	2	3	4	5
123. I have started dealing with old problems in new ways.	1	2	3	4	5
124. I would rather cope with my faults than try to change them.	1	2	3	4	5
125. After all I had done to try and change my problem, every now and again it comes back to haunt me.	1	2	3	4	5

Appendix B

Varimax Rotated Component Patterns
for the Original One Hundred Twenty-five Items

Scale I. Pre-Contemplation

Original Item Number	Component 1	Component 2	Component 3	Component 4
4		.48		
9		.60		
12				.45
16				
20		.49		
25*(1)		.68		
31		.52		
32		.48		
33		.47		
37*(5)		.70		
43		.54		
50		.41		
61*(11)		.73		
68		.58		
72		.65		
74		.48		
82*(13)		.64		
89		.57		
96		.58		
101		.43		
108		.58		
109*(23)		.63		
113*(26)		.65		
120*(29)		.62		
124*(31)		.60		

*Item was retained in final version; new item number is in parentheses.

Scale II. Contemplation

Original Item Number	Component 1	Component 2	Component 3	Component 4
1				
8				.47
17	.49			
19				.43
26*(2)	.58			
27*(4)	.58			
34				.45
42*(8)	.55			
44				
49	.49			
52	.59			
54				
56				
60				
69*(12)	.64			
73	.60			
75				
80		.48		
83				.46
84*(15)	.61			
85*(19)	.52			
93	.50			
100*(21)	.72			
106*(24)	.57			
112				
117	.49			

*Item was retained in final version; new item number is in parentheses.

Scale III. Decision Making

Original Item Number	Component 1	Component 2	Component 3	Component 4
6	.63			
7	.65			
14	.60			
18	.69			
21	.58			
28	.59			
35	.66			
41	.55			
47	.73			
48	.71			
55	.62			
65	.80			
66	.69			
67	.76			
79	.52			
86	.74			
87	.65			
92				.47
99	.71			
104	.72			
107	.81			
114	.66			
115	.80			
121	.81			

*Item was retained in final version; new item number is in parentheses.

PERMANENT RECORD

SOUTHWORTH CO. U.S.A.

Scale IV. Active Change

Original Item Number	Component 1	Component 2	Component 3	Component 4
2	.55			
11				
13	.52			
22	.57			
29*(3)	.47			.52
36	.52			
40	.51			
45*(7)	.65			
51				.43
53	.43			
58*(10)	.51			
64	.43		.54	
71	.40		.61	
77*(14)	.54		.40	
78				
90*(17)	.56			
91				
97*(20)	.50		.44	
98				
103			.55	
105*(25)	.65			
111			.43	
118*(30)	.53			.41
119			.54	
123				

*Item was retained in final version; new item number is in parentheses.

Scale V. Maintenance

Original Item Number	Component 1	Component 2	Component 3	Component 4
3			.52	
5			.47	
10			.41	
15			.45	
23			.49	
24			.66	
30			.58	
38*(6)			.71	
39*(9)			.64	
46			.60	
57			.40	.43
59			.52	
62			.60	
63			.61	
70		.46	.56	
76			.61	
81			.49	
88			.48	
94*(16)			.67	
95*(18)			.70	
102*(22)			.64	
110*(27)			.74	
116			.52	
122*(28)			.70	
125*(32)			.64	

*Item was retained in final version; new item number is in parentheses.

Cluster Listings for Eighteen Clusters

S T A T I S T I C A L A N A L Y S I S S Y S T E M

CLUSTER LISTING

N	CLUSTER	CASE	Z1	Z2	Z3	Z4
		1	1.00600	-0.96100	0.64600	0.41300
		23	1.36400	-1.20500	0.45900	0.26300
		32	1.00600	-0.71700	1.04200	-0.49000
		MEAN	1.12533	-0.96100	0.71567	0.06200
		6	1.36400	0.74500	0.65300	0.86500
		133	1.36400	0.01400	0.84800	0.56400
		24	0.46800	0.25700	0.26400	0.41300
		146	0.11000	0.25700	0.26400	0.41300
		111	0.28900	0.50100	0.26400	0.05900
		134	0.64800	0.01400	0.45900	0.26300
		148	0.64800	0.25700	-0.12400	0.41300
		75	0.64800	1.23200	0.26400	0.26300
		11	-0.24800	-0.47400	1.04200	0.41300
		58	-0.06900	-0.23000	0.84800	0.71400
		115	-0.06900	0.01400	0.84800	0.41300
		49	0.46800	-0.47400	1.24300	0.56400
		90	0.11000	-0.47400	0.65300	1.31700
		74	0.11000	0.50100	0.84800	0.86500
		253	-0.06900	0.50100	1.23600	0.71400
15	7	MEAN	0.38480	0.17607	0.64067	0.55020
		13	-1.32200	0.25700	-0.31900	0.86500
		53	-1.14300	0.25700	0.26400	0.86500
		65	-0.60600	0.68600	0.07000	0.41300
		81	-0.42700	0.50100	-0.12400	0.41300
		79	-0.06900	0.50100	-0.12400	0.86500
		309	-0.42700	0.50100	0.26400	0.86500
		44	-0.42700	1.47600	0.07000	1.31700
		56	-0.06900	0.50100	-0.12400	1.31700
		132	-0.06900	0.50100	-0.12400	1.46700
		159	-0.24800	0.50100	0.07000	1.31700
		63	0.11000	0.98800	-0.31900	1.46700
		352	0.11000	0.74500	-0.12400	1.31700
		72	-0.42700	0.98800	0.65300	1.46700
		175	-0.06900	0.50100	0.45900	1.61800
14	5	MEAN	-0.36307	0.63600	0.04229	1.11236
		42	-1.14300	0.50100	0.26400	-0.49000
		89	-0.78500	0.50100	0.65300	0.11200
		302	-0.96400	0.25700	0.87500	-0.12100
		60	-0.42700	0.74500	1.23600	-0.03900
		119	-0.60600	0.98800	0.65300	-0.18900
		71	-0.06900	0.01400	0.45900	-0.18900
		172	-0.42700	0.50100	0.65300	0.11200
		252	-0.42700	0.25700	0.65300	0.26300
		174	-0.24800	0.50100	0.45900	0.41300
		68	-0.06900	0.25700	1.23600	-0.34000

S T A T I S T I C A L A N A L Y S I S S Y S T E M

CLUSTER LISTING

N	CLUSTER	CASE	Z1	Z2	Z3	Z4
		77	0.11000	0.25700	1.43100	0.26300
		83	0.28900	0.01400	1.62500	-0.18900
		85	0.11000	1.71900	1.43100	-0.18900
13	6	MEAN	-0.35815	0.50092	0.89446	-0.04485
		4	0.64800	-0.96100	-0.31900	0.99300
		91	0.46800	-0.71700	-0.31900	1.01600
		7	0.64800	-0.47400	-0.12400	0.71400
		351	0.82700	-0.71700	-0.12400	0.56400
		135	0.64800	-0.23000	-0.51300	0.86500
		145	0.28900	-0.47400	-0.12400	0.71400
		48	0.28900	-1.20500	-0.70800	0.56400
		141	0.46800	-0.96100	-1.09600	0.21200
		152	0.64800	-1.20500	-0.90200	0.41300
		144	0.64800	-1.20500	-0.31900	0.26300
		50	0.28900	-1.44800	-0.90200	1.31700
		8	1.00600	-1.20500	-1.29100	1.01600
		113	1.18500	-0.96100	-1.29100	0.41300
		25	0.46800	-0.47400	-1.29100	1.01600
		52	1.36400	-0.47400	-0.70800	0.71400
		114	1.00600	-0.71700	-0.90200	1.16600
		156	1.36400	-0.96100	-0.51300	1.31700
		131	0.82700	-0.96100	-0.90200	1.91900
		151	0.82700	-1.20500	-0.51300	2.37100
		176	1.36400	-0.96100	-1.09600	2.37100
20	1	MEAN	0.76405	-0.87580	-0.69785	0.99690
		2	-0.06900	-0.47400	-0.51300	0.11200
		129	0.11000	-0.47400	-0.31900	-0.03900
		84	-0.06900	-0.47400	-0.12400	0.26300
		122	0.11000	-0.23000	-0.12400	-0.18900
		123	0.28900	-0.47400	-0.12400	-0.34000
		78	-0.06900	0.01400	-0.31900	0.11200
		171	-0.01300	0.25700	-0.12400	0.11200
		10	0.64800	-0.47400	-1.09600	-0.18900
		20	0.28900	-0.47400	-1.09600	-0.64100
		158	0.09700	-0.71700	-1.09600	-0.67400
		306	-0.24800	-0.71700	-0.90200	-0.18900
		41	-0.24800	0.01400	-0.70800	-0.94200
		118	-0.06900	-0.23000	-0.31900	-1.09300
		73	-0.42700	-0.71700	-0.70800	-1.09300
		121	-0.60600	-0.23000	-0.51300	-0.54500
		5	0.46800	0.01400	0.07000	-0.79200
		308	0.64800	0.25700	0.26400	-0.49000
		108	0.64800	-0.23000	0.45900	-0.49000
		26	0.64800	0.01400	-0.31900	-0.94200
		33	0.82700	0.01400	-0.28900	-1.09300
		57	1.00600	0.68600	-0.12400	-0.79200
		301	1.18500	0.50100	-0.12400	-0.64100
		35	1.18500	0.01400	-0.51300	-0.03900
		143	1.18500	0.01400	-0.12400	-0.18900
		51	1.36400	-0.71700	-0.51300	-0.49000
		106	0.82700	-0.47400	-0.51300	-0.64100
		107	1.18500	-0.23000	-1.06900	-1.24300
27	4	MEAN	0.40374	-0.20507	-0.40296	-0.48804

S T A T I S T I C A L A N A L Y S I S S Y S T E M

CLUSTER LISTING

N	CLUSTER	CASE	Z1	Z2	Z3	Z4
		9	-0.78500	0.25700	-0.31900	-0.49000
		130	-0.78500	0.50100	-0.12400	-0.34000
		22	-0.42700	0.25700	0.07000	-0.79200
		303	-0.42700	0.50100	0.07000	-0.79200
		109	-0.60600	0.01400	0.07000	-0.64100
		12	-0.42700	0.74500	-0.12400	-0.49000
		19	-0.42700	0.50100	-0.12400	-0.49000
		37	-0.06900	0.50100	-0.12400	-0.34000
		64	-0.06900	0.74500	-0.12400	-0.18900
		70	-0.06900	0.74500	0.07000	-0.49000
		16	-0.24800	0.50100	-0.12400	-0.03900
		80	-0.42700	0.50100	-0.12400	-0.06900
		59	-0.42700	0.38700	0.07000	-0.18900
		154	-0.24800	0.19100	-0.12400	-0.34000
		21	0.11000	0.50100	0.65300	-0.79200
		54	0.28900	0.25700	0.07000	-1.24300
		305	-0.06900	0.25700	0.08300	-1.09300
		112	-0.42700	0.50100	0.26400	-1.24300
		18	-0.06900	0.50100	-0.12400	-0.79200
		173	-0.06900	0.50100	-0.12400	-0.79200
		149	0.28900	0.74500	-0.12400	-0.79200
		116	0.11000	0.25700	-0.12400	-0.34000
		251	0.28900	0.50100	-0.12400	-0.18900
		124	0.28900	1.23200	-0.51300	-0.49000
		61	-0.42700	-0.23000	0.45900	-1.54500
		117	0.11000	-0.71700	-0.12400	-1.09300
		142	0.11000	-0.23000	-0.51300	-1.99600
27	2	MEAN	-0.18170	0.38604	-0.04452	-0.67004
		3	0.46800	-1.20500	-1.68000	-0.67200
		128	0.64800	-1.44800	-1.29100	-0.79200
		17	1.18500	-1.20500	-1.29100	-0.64100
		62	1.36400	-1.44800	-1.68000	-0.79200
		15	1.00600	-1.20500	-1.48500	-1.24300
		38	1.00600	-1.44800	-1.29100	-1.39400
		87	1.36400	-1.44800	-1.68000	-1.54500
		147	1.36400	-1.44800	-1.68000	-1.39400
		47	1.36400	-1.44800	-1.29100	-1.99600
		125	1.18500	-1.44800	-0.51300	-1.99600
		69	0.46800	-1.20500	-0.90200	-1.09300
		110	0.46800	-1.20500	-0.70800	-1.39400
		127	0.46800	-1.44800	-1.09600	-1.84600
13	3	MEAN	0.95062	-1.35454	-1.27600	-1.29215

S T A T I S T I C A L A N A L Y S I S S Y S T E M

CLUSTER LISTING

N	CLUSTER	CASE	Z1	Z2	Z3	Z4
		36	-1.32200	-1.20500	-0.31900	-1.24300
		66	-0.42700	-0.71700	-1.68000	-1.99600
		MEAN	-0.87450	-0.96100	-0.99950	-1.61950
		29	0.11000	1.23200	2.01400	0.86500
		155	0.11000	0.50100	2.20800	1.31700
		126	0.46800	0.98800	3.37500	1.61800
		76	-1.32200	0.50100	2.98600	0.86500
		120	-0.09200	-0.71700	2.79200	0.86500
5	8	MEAN	-0.14520	0.50100	2.67500	1.10600
		88	-0.24800	-0.71700	2.79200	-1.24300
		307	1.36400	-1.44800	2.79200	2.82300
		28	-2.03900	0.74500	0.65300	0.26300
		46	-3.11300	0.74500	1.23600	0.11200
		MEAN	-2.57600	0.74500	0.94450	0.18750
		31	-1.14300	0.50100	-0.70800	-0.03900
		67	-1.32200	0.98800	-0.51300	-0.49000
		82	-1.14300	1.23200	-0.12400	0.26300
		55	-2.03900	0.20500	-0.12400	-0.54500
		86	-1.68100	-0.23000	-0.12400	-0.49000
		43	-2.03900	1.96300	-0.12400	-0.79200
6	9	MEAN	-1.56117	0.77650	-0.28617	-0.34883
		30	-2.75500	1.71900	-0.90200	2.37100
		304	-1.86000	0.98800	0.45900	1.61800
		MEAN	-2.30750	1.35350	-0.22150	1.99450
		39	-4.18800	4.15600	1.23600	-0.34000
		40	-4.36700	-1.44800	-1.68000	-1.99600
		45	-2.93400	-1.20500	-1.68000	-1.84600
		MEAN	-3.65050	-1.32650	-1.68000	-1.92100
		157	-0.96400	6.34900	4.15200	2.82300