

Name _____ Sex _____ Age _____ Date _____

INSTRUCTIONS

Please indicate what percentage of the time each of the statements below applies to you, by using the scale to the left of the items. Choose the percentage that comes closest to how often the item describes you.

0% 25% 50% 75% 100%

- () () () () () 1. I feel I have to be nice to other people.
- () () () () () 2. It is important to me to be free and independent.
- () () () () () 3. It is more important that I know I've done a good job than having others know it.
- () () () () () 4. Being able to share experiences with other people makes them much more enjoyable for me.
- () () () () () 5. I am afraid of hurting other people's feelings.
- () () () () () 6. It bothers me when people try to direct my behavior or activities.
- () () () () () 7. I find it difficult to say "no" to people.
- () () () () () 8. I feel bad if I do not have some social plans for the weekend.
- () () () () () 9. I prize being a unique individual more than being a member of a group.
- () () () () () 10. When I feel sick, I like to left alone.

0% 25% 50% 75% 100%

- () () () () () 11. I am concerned that if people knew my faults or weaknesses they would not like me.
- () () () () () 12. If I think I am right about something, I feel comfortable expressing myself even if others don't like it.
- () () () () () 13. When visiting people, I get fidgety when sitting around talking and would rather get up and do something.
- () () () () () 14. It is more important to meet your own objectives on a task than to meet another person's objectives.
- () () () () () 15. I do things that are not in my best interest in order to please others.
- () () () () () 16. I like to take long walks by myself.
- () () () () () 17. I am more concerned that people like me than I am about making important achievements.

- | 0% | 25% | 50% | 75% | 100% | |
|-----|-----|-----|-----|------|--|
| () | () | () | () | () | 18. I would be uncomfortable dining out in a restaurant by myself. |
| () | () | () | () | () | 19. I don't enjoy what I am doing when I don't feel that someone in my life really cares about me. |
| () | () | () | () | () | 20. I am not influenced by others in what I decide to do. |
| () | () | () | () | () | 21. It is very important that I feel free to get up and go wherever I want. |
| () | () | () | () | () | 22. I value work accomplishments more than I value making friends. |
| () | () | () | () | () | 23. I find it is of importance to be in control of my emotions. |
| () | () | () | () | () | 24. I get uncomfortable when I am not sure how I am expected to behave in the presence of other people. |
| () | () | () | () | () | 25. I feel more comfortable helping others than receiving help. |
| () | () | () | () | () | 26. It would not be much fun for me to travel to a new place all alone. |
| () | () | () | () | () | 27. If a friend has not called for a while, I get worried that he or she has forgotten me. |
| 0% | 25% | 50% | 75% | 100% | |
| () | () | () | () | () | 28. It is more important to be active and doing things than having close relations with other people. |
| () | () | () | () | () | 29. I get uncomfortable around a person who does not clearly like me. |
| () | () | () | () | () | 30. If a goal is important to me, I will pursue it even if it may make other people uncomfortable. |
| () | () | () | () | () | 31. I find it difficult to be separated from people I love. |
| () | () | () | () | () | 32. When I achieve a goal I get more satisfaction from reaching the goal than from any praise I might get. |
| () | () | () | () | () | 33. I censor what I say because I am concerned that the other person may disapprove or disagree. |
| () | () | () | () | () | 34. I get lonely when I am home by myself at night. |
| () | () | () | () | () | 35. I often find myself thinking about friends or family. |

- | 0% | 25% | 50% | 75% | 100% | |
|-----|-----|-----|-----|------|--|
| () | () | () | () | () | 36. I prefer to make my own plans, so I am not controlled by others. |
| () | () | () | () | () | 37. I can comfortably be by myself all day without feeling a need to have someone around. |
| () | () | () | () | () | 38. If somebody criticizes my appearance, I feel I am not attractive to other people. |
| () | () | () | () | () | 39. It is more important to get a job done than to worry about people's reactions. |
| () | () | () | () | () | 40. I like to spend my free time with others. |
| () | () | () | () | () | 41. I don't like to answer personal questions because they feel like an invasion of my privacy. |
| () | () | () | () | () | 42. When I have a problem, I like to go off on my own and think it through rather than being influenced by others. |
| () | () | () | () | () | 43. In relationships, people often are too demanding of each other. |
| () | () | () | () | () | 44. I am uneasy when I cannot tell whether or not someone I've met likes me. |
| () | () | () | () | () | 45. I set my own standards and goals for myself rather than accepting those of other people. |
| () | () | () | () | () | 46. I am more apologetic to others than I need to be. |
| 0% | 25% | 50% | 75% | 100% | |
| () | () | () | () | () | 47. It is important to me to be liked and approved of by others. |
| () | () | () | () | () | 48. I enjoy accomplishing things more than being given credit for them. |
| () | () | () | () | () | 49. Having close bonds with other people makes me feel secure. |
| () | () | () | () | () | 50. When I am with other people, I look for signs whether or not they like being with me. |
| () | () | () | () | () | 51. I like to go off on my own, exploring new places -- without other people. |
| () | () | () | () | () | 52. If I think somebody may be upset at me, I want to apologize. |
| () | () | () | () | () | 53. I like to be certain that there is somebody close I can contact in case something unpleasant happens to me. |

- 0% 25% 50% 75% 100%
- () () () () () 54. I feel confined when I have to sit through a long meeting.
- () () () () () 55. I don't like people to invade my privacy.
- () () () () () 56. I feel uncomfortable being a nonconformist.
- () () () () () 57. The worst part about being in jail would be not being able to move around freely.
- () () () () () 58. The worst part about growing old is being left alone.
- () () () () () 59. I worry that somebody I love will die.
- () () () () () 60. The possibility of being rejected by others for standing up for my rights would not stop me.

SCORING INSTRUCTIONS FOR THE 60 ITEM SOCIOTROPY-AUTONOMY SCALE (SAS)

The following 30 items comprise the Sociotropy scale:

1 4 5 7 8 11 15 17 18 19
24 26 27 29 31 33 34 35 38 40
44 46 47 49 50 52 53 56 58 59

The following 30 items comprise the Autonomy scale:

2 3 6 9 10 12 13 14 16 20
21 22 23 25 28 30 32 36 37 39
41 42 43 45 48 51 54 55 57 60

To score each scale, assign points to the individual's responses as follows:

<u>Response</u>	<u>Points</u>
0%	0
25%	1
50%	2
75%	3
100%	4

Compute an arithmetic sum for the Sociotropy items, and another for the autonomy items. Scores for individual factors of either scale can be computed in a similar manner.

Development of the Sociotropy-Autonomy Scale:
A Measure of Personality Factors in Psychopathology

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Beck (1983) has described two relatively stable personality characteristics that can predispose individuals' cognitive distortions of and exaggerated emotional responses (e.g., anxiety, sadness) to particular environmental events. These two dimensions, sociality and individuality, are not considered to be fixed personality types, but modes that can dominate an individual's psychological functioning. One mode may predominate, or a person may show an equivalent intensity of each. This paper describes the development of a questionnaire measure of the attitudes associated respectively with sociality and autonomy.

Sociality encompasses the beliefs, attitudes and goals that draw an individual to other persons and that depend on these relationships for the satisfaction of the derived strivings. An infant's bonding with the caretaker is promoted by tactile stimulation, pleasant feelings, and relief of discomfort. The need for nurturance is associated with needs for protection and assistance. When the needs are met, the infant experiences gratification. An individual's social dependency, a component of sociality, is manifested in the desire for help in (a) carrying out functions necessary for survival, (b) relieving discomfort or pain, and (c) carrying out plans, solving problems, and achieving mastery. Sociality is characterized by receiving gratification from a wide range of interpersonal interactions involving intimacy, sharing, empathy, understanding, approval, affection, protection, guidance, and help.

Individuality is reflected in those goals and strivings that reflect a person's exclusive investment in himself: developing one's own capacities, strategies and interests that may or may not include other people. Although other people are not the primary focus, they may serve as a practical vehicle for attaining individualistic goals. Individuality is an expression of values, goals, and drives relevant to self-definition, mastery of bodily functioning, acquisition of power, and control over the environment. Developmentally, the child experiences an internal pressure to

differentiate himself or herself from other individuals in the family. the declaration of one's own need and rights (All these are not honored). Self-definition also involves setting boundaries to forestall encroachment on the child's private domain. The self-definition further involves investment in one's own uniqueness that sets one apart from all other individuals. Other characteristics of individuality include self-reliance (the ability to utilize one's own instrumentalities for food intake, action and mobility, problem solving); the integrated control of mind, body, and somatic processes; exploration; mastery of environmental challenges; defense against environmental threats; coordination of the preceding functions; and a sense of power to do what one wants.

Adult Personality

We conceive of the formation of clusters of attitudes concerning the specific strivings and goals of sociality and individuality. For example, in the more extreme form, dependency is expressed in attitudes such as "I need other people's help in order to carry out my goals." The more specific formula for sociality would be "If I don't have help, I won't be able to do what I have to."

The various components of the two dimensions evolve into personality traits, behavioral dispositions, and attitudes. There may be a heightened sensitivity to threats to any of the attributes of striving that are particularly prized by the individual. Thus, an individual who places a high premium on mobility, freedom of action, and freedom of choice, may feel "claustrophobic" not only when closed in by the physical environment but in relationship to other people.

Similarly, an individual who has a strong orientation toward receiving approval from other people is likely to be sensitive to situations in which there is not clear evidence of approval

(ambiguous feedback). Beck (1983) has hypothesized that the factors precipitating depressions in autonomous and socially dependent persons will be related to the respective sensitivities of these individuals. A person operating in an autonomous mode is expected to become depressed when external or internal factors perceived as irreversible thwart the achievement of goals. On the other hand, stressors that interrupt "social supplies" are expected to elicit depression in the socially dependent person. In addition, clinical data suggest that autonomous and socially dependent depressions have different sets of depressive symptoms and are responsive to different types of therapeutic intervention (e.g., autonomous individuals prefer collaborative problem-solving with the therapist, focused on increasing mastery experiences, and the socially dependent individual prefers a warm, empathetic therapeutic relationship).

In order to test the above theoretical/clinical formulation, scales were constructed specifically to assess the characteristics of sociality and autonomy. Although there is some overlap between these constructs and characteristics assessed by established personality scales (e.g., Jackson's Personality Research Form, PRF-E), it was deemed necessary to develop new scales reflecting the particular content of the autonomous and socially dependent modes of functioning commonly observed in patients with depressive and anxiety disorders.

Method

Subjects

Item analyses for the "sociotropy" and "autonomy" scales were based on responses of 378 adult outpatients at the University of Pennsylvania's Center for Cognitive Therapy. The population at the Center includes a majority of depressive and anxiety disorders, as well as individuals with a variety of other diagnoses such as personality disorders, adjustment disorder,

and substance abuse. Patients tend to be well educated and of middle class and upper middle class backgrounds, although there is considerable range in these characteristics.

Materials and Procedures

Two separate scales were devised to assess the degrees to which an individual is characterized by "sociotropic" and "autonomous" attitudes. Items for the sociotropy and autonomy scales were based on patients' self-reports and clinical material collected from therapists at the Center for Cognitive Therapy in Philadelphia. Items were selected according to clarity of wording and representation of the content of the above definitions.

The initial item pools included 56 sociotropy and 53 autonomy items. The full set of items was administered to the 378 outpatients and was subjected to a factor analysis. When forced into two factors, the items generally separated into two groups representing sociotropy and autonomy. No items loaded positively on the inappropriate scale. Each of the autonomy and sociotropy scales was subjected to a separate factor analysis. Items that did not load on a significant factor at this point, did not load on either of the 2 factors in the analysis of the total item set, and/or had weak item-total correlations were dropped.

The remaining 30 sociotropy and 30 autonomy items were factor analyzed separately. The characteristics of the autonomy scale indicated that a solution with orthogonal rotation was most appropriate, and the greater association of factors in the sociotropy scale called for an oblique rotation. The best solution for each scale included three factors. The autonomy scale factors were (1) individualistic or autonomous achievement, (2) mobility/freedom from control by others, and (3) preference for solitude. The sociotropy scale factors were (1) concern about disapproval, (2) attachment/concern about separation, and (3) pleasing others. Table 1 presents the correlations among factors in each scale. When an oblique rotation was applied to the

autonomy factors, the factor correlations were low. Table 2 presents the items of the sociotropy and autonomy scales, organized by factor, with item-total correlations and factor loadings.

The sociotropy and autonomy scales had good internal consistency (Cronbach alphas of .90 and .83, respectively), and the subscales derived from each scale's factors also tended to be internally consistent. Table 3 presents the scale and subscale means, standard deviations, and alpha coefficients. Table 4 presents the correlations among the scales and subscales derived from the sets of items loading on the factors. The sociotropy and autonomy total scales had a significant but low negative correlation ($r = -.18$), indicating that the two dimensions are largely independent. This finding is consistent with the theoretical expectation that an individual might have both characteristics.

Table 1
 Correlations Among Factors in Sociotropy and Autonomy Scales
 (n = 378)

<u>Sociotropy Scale</u>			
	Factor 1	Factor 2	Factor 3
Factor 1 Concern About Disapproval	--	.38	.38
Factor 2 Attachment/Concern About Separation		--	.25
Factor 3 Pleasing Others			--

<u>Autonomy Scale</u>			
	Factor 1	Factor 2	Factor 3
Factor 1 Individualistic or Autonomous Achievement	--	.14	.23
Factor 2 Mobility/Freedom From Control by Others		--	.33
Factor 3 Preference for Solitude			--

Eigenvalue = 4.80
 % Variance = 58.3
 Scale Mean = 27.67
 Alpha = .82

Table 2
 SAS Factors
 (n = 378)

AUTONOMY FACTOR 1

Individualistic or Autonomous Achievement

Item-Total Correlation	Factor Loading	
.25	.59	60. The possibility of being rejected by others for standing up for my rights would not stop me.
.56	.58	32. When I achieve a goal I get more satisfaction from reaching the goal than from any praise I might get.
.41	.56	14. It is more important to meet your own objectives on a task than to meet another person's objectives.
.38	.56	3. It is more important that I know I've done a good job than having others know it.
.20	.55	12. If I think I am right about something, I feel comfortable expressing myself even if others don't like it.
.47	.53	9. I prize being a unique individual more than being a member of a group.
.38	.53	30. If a goal is important to me, I will pursue it even if it may make other people uncomfortable.
.43	.48	48. I enjoy accomplishing things more than being given credit for them.
.42	.52	45. I set my own standards and goals for myself rather than accepting those of other people.
.37	.41	39. It is more important to get a job done than to worry about people's reactions.
.31	.41	20. I am not influenced by others in what I decide to do.
.40	.36	2. It is important to me to be free and independent.

Eigenvalue = 2.35
 % Variance = 28.5
 Scale Mean = 27.12
 Alpha = .76

AUTONOMY FACTOR 2

Mobility/Freedom From Control by Others

Item-Total Correlation	Factor Loading	
.41	.63	21. It is very important that I feel free to get up and go wherever I want.
.46	.52	55. I don't like people to invade my privacy.
.27	.51	54. I feel confined when I have to sit through a long meeting.
.19	.51	13. When visiting people, I get fidgety when sitting around talking and would rather get up and do something.
.27	.49	57. The worst thing about being in jail would be not being able to move around freely.
.38	.44	41. I don't like to answer personal questions because they feel like an invasion of my privacy.
.39	.41	28. It is more important to be active and doing things than having close relations with other people.
.26	.37	23. I find it is of importance to be in control of my emotions.
.43	.36	36. I prefer to make my own plans, so I am not controlled by others.
.24	.36	43. In relationships, people often are too demanding of each other.
.36	.33	6. It bothers me when people try to direct my behavior or activities.
.32	.31	22. I value work accomplishments more than I value making friends.

Eigenvalue = 1.09
% Variance = 13.2
Scale Mean = 12.50
Alpha = .60

AUTONOMY FACTOR 3

Preference for Solitude

Item-Total Correlation	Factor Loading	
.30	.49	16. I like to take long walks by myself.
.38	.46	42. When I have a problem, I like to go off on my own and think it through rather than being influenced by others.
.28	.42	10. When I feel sick, I like to be left alone.
.31	.38	37. I can comfortably be by myself all day without feeling a need to have someone around.
.19	.33	25. I feel more comfortable helping others than receiving help.
.26	.31	51. I like to go off on my own, exploring new places-- without other people.

Eigenvalue = 7.28
 % Variance = 69.6
 Scale Mean = 22.82
 Alpha = .86

SOCIOTROPY FACTOR 1

Concern About Disapproval

Item-Total Correlation	Factor Loading	
.55	.73	50. When I am with other people, I look for signs whether or not they like being with me.
.63	.64	44. I am uneasy when I cannot tell whether or not someone I've met likes me.
.56	.63	38. If somebody criticizes my appearance, I feel I am not attractive to other people.
.54	.61	24. I get uncomfortable when I am not sure how I am expected to behave in the presence of other people.
.53	.56	11. I am concerned that if people knew my faults or weaknesses, they would not like me.
.56	.52	33. I censor what I say because I am concerned that the other person may disapprove or disagree.
.55	.46	29. I get uncomfortable around a person who does not clearly like me.
.55	.42	17. I am more concerned that people like me than I am about making important achievements.
.50	.40	27. If a friend has not called for a while, I get worried that he or she has forgotten me.
.41	.35	18. I would be uncomfortable dining out in a restaurant by myself.

Eigenvalue = 1.91
 % Variance = 18.3
 Scale Mean = 32.98
 Alpha = .80

SOCIOTROPY FACTOR 2

Attachment/Concern About Separation

Item-Total Correlation	Factor Loading	
.36	.65	31. I find it difficult to be separated from people I love.
.31	.57	49. Having close bonds with other people makes me feel secure.
.42	.55	34. I get lonely when I am home by myself at night.
.38	.55	35. I often find myself thinking about friends or family.
.32	.49	4. Being able to share experiences with other people makes them much more enjoyable for me.
.42	.45	53. I like to be certain that there is somebody close I can contact in case something unpleasant happens to me.
.23	.45	40. I like to spend my free time with others.
.47	.42	19. I don't enjoy what I am doing when I don't feel that someone in my life really cares about me.
.37	.41	26. It would not be much fun for me to travel to a new place all alone.
.43	.40	58. The worst part about growing old is being left alone.
.39	.38	59. I worry that somebody I love will die.
.60	.36	47. It is important to me to be liked and approved of by others.
.32	.32	8. I feel bad if I do not have some social plans for the weekend.

Eigenvalue = 1.27
% Variance = 12.1
Scale Mean = 17.29
Alpha = .81

SOCIOTROPY FACTOR 3

Pleasing Others

Item-Total Correlation	Factor Loading	
.51	.70	5. I am afraid of hurting other people's feelings.
.41	.64	1. I feel I have to be nice to other people.
.45	.59	46. I am more apologetic to others than I need to be.
.40	.58	7. I find it difficult to say "no" to people.
.48	.54	52. If I think somebody may be upset at me, I want to apologize.
.43	.42	15. I do things that are not in my best interest in order to please others.
.51	.41	56. I feel uncomfortable being a nonconformist.

Table 3

SAS Scale and Subscale Means, Standard Deviations
and Alpha Coefficients

(n = 378)

Scale	Mean	# Items	Standard Deviation	Alpha
Sociotropy Total Scale	73.01	30	18.12	.90
Sociotropy Factor 1	22.82	10	8.50	.86
Sociotropy Factor 2	32.98	13	8.28	.80
Sociotropy Factor 3	17.29	7	5.29	.81
Autonomy Total Scale	67.28	30	13.74	.83
Autonomy Factor 1	27.67	12	7.39	.82
Autonomy Factor 2	27.12	12	7.26	.76
Autonomy Factor 3	12.50	6	4.10	.60

Table 4
 Correlations of Scores on SAS Scales and Subscales
 (n = 378)

	Sociotropy	Soc. 1	Soc. 2	Soc. 3	Autonomy	Aut. 1	Aut. 2	Aut. 3
Sociotropy	---	.87	.81	.74	-.18	-.45	.23	-.23
Sociotropy 1		--	.51	.58	-.05	-.44	.36	-.07
Sociotropy 2			--	.38	-.19	-.21	.07	-.40
Sociotropy 3				--	-.23	-.49	.09	-.07
Autonomy Total					--	.73	.76	.63
Autonomy 1						--	.20	.29
Autonomy 2							--	.31
Autonomy 3								--

Note. Correlations greater than .085 are significant at $p < .05$, one-tailed.

Name _____ Sex _____ Age _____ Date _____

INSTRUCTIONS

Please indicate what percentage of the time each of the statements below applies to you, by using the scale to the left of the items. Choose the percentage that comes closest to how often the item describes you.

- | 0% | 25% | 50% | 75% | 100% | |
|-----|-----|-----|-----|------|---|
| () | () | () | () | () | 1. I feel I have to be nice to other people. |
| () | () | () | () | () | 2. It is important to me to be free and independent. |
| () | () | () | () | () | 3. It is more important that I know I've done a good job than having others know it. |
| () | () | () | () | () | 4. Being able to share experiences with other people makes then much more enjoyable for me. |
| () | () | () | () | () | 5. I am afraid of hurting other people's feelings. |
| () | () | () | () | () | 6. It bothers me when people try to direct my behavior or activities |
| () | () | () | () | () | 7. I find it difficult to say "no" to people. |
| () | () | () | () | () | 8. I feel bad if I do not have social plans for the weekend. |
| () | () | () | () | () | 9. I prize being a unique individual more than being a member of a group. |
| () | () | () | () | () | 10. When I feel sick, I like to be left alone. |
| 0% | 25% | 50% | 75% | 100% | |
| () | () | () | () | () | 11. I am concerned that if people knew my faults or weaknesses they would not like me. |
| () | () | () | () | () | 12. If I think I am right about something, I feel comfortable expressing myself even if others don't like it. |
| () | () | () | () | () | 13. When visiting people, I get fidgety when sitting around talking and would rather get up and do something. |
| () | () | () | () | () | 14. It is more important to meet your own objectives on a task than to meet another person's objectives. |
| () | () | () | () | () | 15. I do things that are not in my best interest in order to please others. |
| () | () | () | () | () | 16. I like to take long walks by myself. |
| () | () | () | () | () | 17. I am more concerned that people like me than I am about making important achievements. |
| () | () | () | () | () | 18. I would be uncomfortable dining out in a restaurant by myself. |

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()	()	()	()	()	20. I am not influenced by others in what I decide to do.
()	()	()	()	()	21. It is very important that I feel free to get up and go wherever I want.
()	()	()	()	()	22. I value work accomplishments more than I value making friends.
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()	()	()	()	()	25. I feel more comfortable helping others than receiving help.
()	()	()	()	()	26. It would not be much fun for me to travel to a new place all alone.
()	()	()	()	()	27. If a friend has not called for a while, I get worried that he or she has forgotten me.
()	()	()	()	()	28. It is more important to be active and doing things than having close relationships with other people.
()	()	()	()	()	29. I get uncomfortable around a person who does not clearly like me.
0%	25%	50%	75%	100%	
()	()	()	()	()	30. If a goal is important to me, I will pursue it even if it may make other people uncomfortable.
()	()	()	()	()	31. I find it difficult to be separated from people I love.
()	()	()	()	()	32. When I achieve a goal I get more satisfaction from reaching the goal than from any praise I might get.
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()	()	()	()	()	34. I get lonely when I am home by myself at night.
()	()	()	()	()	35. I often find myself thinking about family and friends.
()	()	()	()	()	36. I prefer to make my own plans, so I am not controlled by others.
()	()	()	()	()	37. I can comfortably be by myself all day without feeling a need to have someone around.
()	()	()	()	()	38. If somebody criticizes my appearance, I feel I am not attractive to other people.

0%	25%	50%	75%	100%	
()	()	()	()	()	39. It is more important to get a job done than to worry about people's reactions.
()	()	()	()	()	40. I like to spend my free time with others.
()	()	()	()	()	41. I don't like to answer personal questions because they feel like an invasion of my privacy.
()	()	()	()	()	42. When I have a problem, I like to go off on my own and think it through rather than being influenced by others.
()	()	()	()	()	43. In relationships, people often are too demanding of each other.
()	()	()	()	()	44. I am uneasy when I cannot tell whether or not someone I've met likes me.
()	()	()	()	()	45. I set my own standards and goals for myself rather than accepting those of other people.
()	()	()	()	()	46. I am more apologetic to others than I need to be.
()	()	()	()	()	47. It is important to me to be liked and approved of by others.
()	()	()	()	()	48. I enjoy accomplishing things more than being given credit for them.
0%	25%	50%	75%	100%	
()	()	()	()	()	49. Having close bonds with other people makes me feel secure.
()	()	()	()	()	50. When I am with other people, I look for signs whether or not they like being with me.
()	()	()	()	()	51. I like to go off on my own, exploring new places—without other people.
()	()	()	()	()	52. If I think somebody may be upset at me, I want to apologize.
()	()	()	()	()	53. I like to be certain that there is somebody close I can contact in case something unpleasant happens to me.
()	()	()	()	()	54. I feel confined when I have to sit through a long meeting.
()	()	()	()	()	55. I don't like people for invade my privacy.
()	()	()	()	()	56. I feel uncomfortable being a nonconformist.
()	()	()	()	()	57. The worst part about being in jail would be not being able to move around freely.
()	()	()	()	()	58. The worst part about growing old is being left alone.

0% 25% 50% 75% 100%

() () () () () 59. I worry that somebody I love will die.

() () () () () 60. The possibility of being rejected by others for standing up for my rights would not stop me.

SCORING INSTRUCTIONS FOR THE 60-ITEM SOCIOTROPY-AUTONOMY SCALE (SAS)

The following 30 items comprise the Sociotropy scale:

1 4 5 7 8 11 15 17 18 19

24 6 27 29 31 33 34 35 38 40

44 46 47 49 50 52 53 56 58 59

The following 30 items comprise the Autonomy scale:

2 3 6 9 10 12 13 14 16 20

21 22 23 25 28 30 32 36 37 39

41 42 43 45 48 51 54 55 57 60

To score each scale, assign points to the individual's responses as follows:

<u>Responses</u>	<u>Points</u>
0%	0
25%	1
50%	2
75%	3
100%	4

Compute an arithmetic sum for the sociotropy items, and another for the autonomy items. Scores for individual factors of either scale can be computed in a similar manner.

The Sociotropy–Autonomy Scale: Structure and Implications

Peter J. Bieling,^{1,3} Aaron T. Beck,² and Gregory K. Brown²

The Sociotropy Autonomy Scale (SAS), especially the Autonomy Scale, has demonstrated inconsistent results concerning its relationship to depression and psychopathology. We hypothesized that these inconsistent findings may be related to the factor structure of the SAS. Exploratory and confirmatory factor analyses of the SAS were conducted in two separate samples of psychiatric outpatients (n = 1033, n = 1034). The results revealed a two-factor solution for sociotropy: Preference for Affiliation and Fear of Criticism and Rejection. The second factor, Fear of Criticism and Rejection, had a stronger association with psychopathology than the first factor. The results also indicated a two-factor solution for autonomy: Sensitivity to Others' Control and Independent Goal Attainment. Although the Sensitivity to Others' Control factor had a positive correlation with psychopathology, the Independent Goal Attainment factor had a negative correlation with psychopathology. We speculate that Independent Goal Attainment may be associated with resilience or hardiness and functions as a buffer against stress. Implications for revising the SAS as well as employing these factors in future studies are discussed.

KEY WORDS: sociotropy; autonomy; factor structure; personality; depression.

Utilizing a cognitive perspective, Beck (1983) described two dimensional personality “modes,” which he called sociotropy and autonomy. Sociotropy (social dependency) was described as “the person’s investment in positive interchange with others” (p. 272) and this personality mode was characterized by a dependence on social feedback for gratification and support. Autonomy was described as “the person’s investment in preserving and increasing his independence, mobility, and personal rights” (p. 272). A person highly invested in this mode derives gratification from directing his own activities and attaining meaningful goals. Other theorists focusing on depression have described similar personality factors and at least three measures of these constructs exist, the Sociotropy–Autonomy Scale (SAS; Beck,

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Epstein, Harrison, & Emery, 1983), the Personal Style Inventory (PSI; Robins et al., 1994), and the Depressive Experiences Questionnaire (DEQ; Blatt, D'Afflitti, & Quinlan, 1976). Studies that have utilized two or more of these scales have indicated that these measures assess overlapping, but not parallel constructs (Alden & Bieling, 1996; Blaney & Kutcher, 1991; Nietzel & Harris, 1990). The focus of the present study was to examine the sociotropy and autonomy constructs as assessed by the SAS.

The SAS was developed from patient self-reports and clinical material collected from therapists about the patients' "sociotropic and autonomous attitudes" (Beck et al., 1983, p. 5). In a sample of 378 psychiatric outpatients, items were fitted to a two-factor structure, and a final pool of items (60 of 109) was derived after careful scrutiny of item psychometrics. Each 30-item scale was subsequently factor-analyzed, yielding three factors for sociotropy (Concern About Disapproval, Attachment/Concern About Separation, Pleasing Others) and three factors for autonomy (Individualistic or Autonomous Achievement, Mobility/Freedom from Control by Others, Preference for Solitude). In this initial factor analysis, little information about the criteria for choosing the number of factors was provided, and no eigenvalues were reported. Also, an orthogonal rotation was chosen for the sociotropy factors and an oblique rotation was chosen for autonomy factors. The resulting sociotropy subscales were positively correlated, whereas the autonomy subscales had weak intercorrelations. Thus, the original factor analysis of the SAS contained inconsistencies at the level of factor extraction and rotation, and this solution was not cross-validated in a second sample. Subsequently, a number of investigators have examined the psychometric properties of the scales as well as their external validity.

Since its creation, the SAS has been successfully used in a wide variety of research paradigms. Both sociotropy and autonomy have been found to predict response to treatment, with sociotropic individuals faring better in a group therapy setting and autonomous individuals responding more favorably to individual therapy (Zettle, Haflich, & Reynolds, 1992; Zettle & Herring, 1995). In addition, sociotropy has been found to interact with negative interpersonal events to predict depression (for a review, see Clark, Beck, and Alford, 1999). Also, sociotropy appears to be related to other measures of theoretically consistent constructs including dependency, lack of assertion, and introversion (Cappeliez, 1993; Gilbert & Reynolds, 1990; Moore & Blackburn, 1994; Robins, Block & Peselow, 1989). Importantly, autonomy has been shown to predict positive response to antidepressant medication beyond a placebo response and to predict recovery from depression in medication treatment (Peselow, Robins, Sanfilippo, Block, & Fieve, 1992; Scott, Harrington, House, & Ferrier, 1996). Autonomy, in association with negative achievement events, has been a less robust predictor of depression and appears to have less consistent personality correlates (Clark & Beck, 1991; Clark & Oates, 1995; Hammen, Ellicott, & Gitlin, 1989, 1992; Robins & Block, 1988; Robins et al., 1994). These discrepancies in prediction, particularly with respect to autonomy, have resulted in a reexamination of the validity and internal structure of the SAS.

Clark and colleagues (Clark, Steer, Haslam, Beck, & Brown, 1997) conducted a series of studies to identify naturally occurring clusters that occur when using

the SAS scales. Four such clusters were identified and termed "independent," "dependent," "individualistic achievement," and "low scoring" based on scores for both the sociotropy and autonomy scales (Clark et al., 1997). The patients in the four clusters did not differ with regard to diagnosis, but "independent" and "dependent" clusters had higher levels of anxiety and depression symptoms than did the "individualistic achievement" and "low scoring" clusters. Structural analysis of an alternative measure of sociotropy and autonomy, the PSI, also suggested that autonomy is not a unitary construct and instead consists of two factors, a "need for control" and "defensive separation" from others (Bagby, Parker, Joffe, Schuller, & Gilchrist, 1998). Moreover, Sato and McCann (1997) factor-analyzed a revised SAS scale (a modified version of the scale with 74 items; Clark & Beck, 1991), along with the PSI, and concluded that the combined item sets were represented by three autonomy-related factors; "insensitivity," "control," and "achievement." Taken together, the results of these studies suggest that autonomy may consist of at least two subfactors, a seemingly more dysfunctional "need for control/independence" factor and a less dysfunctional "individualistic achievement" factor.

Researchers examining sociotropy have also suggested that this personality mode may consist of more than one factor (Pincus & Gurtman, 1995; Rude & Burnham, 1995; Sato & McCann, 1997). In a study conducted by researchers interested in the structure of dependency, each of the three SAS sociotropy factors represented combinations of warmth and unassertiveness (Pincus & Gurtman, 1995). In another study, the construct of sociotropy was assessed from a critical feminist perspective which suggests that intimacy and connectedness are undervalued at a societal level (Rude & Burnham, 1995). Factor analyses demonstrated that the SAS sociotropy scale could be decomposed into two factors. The first represented social anxiety and fear of disapproval and was termed "neediness." The second factor represented sensitivity toward others and valuing relationships and was termed "connectedness." "Neediness" was associated with symptoms of depression, while "connectedness" was not associated with these symptoms (Rude & Burnham, 1995). Further, in a confirmatory analysis of the sociotropy subscale of the PSI, Bagby and colleagues (1998) found evidence for three factors in sociotropy: "concern for what others think," "dependency," and "pleasing others." When SAS and PSI items were analyzed together by Sato and McCann (1997), sociotropy was represented by two factors, "sensitivity (to others)" and "attachment." Similar results have also been reported with the DEQ dependency scale. It appears to contain two factors termed "dependence on others" and "relatedness" (Blatt et al., 1995). Taken together, these studies suggest that sociotropy may be represented by two factors, a potentially functional variant related to affiliation and a dysfunctional variant related to dependency and sensitivity.

These studies suggest that a number of questions related to the structure of the SAS remain unresolved. The initial factor analysis of the SAS yielded three factors for both the sociotropy and autonomy scales (Beck et al., 1983), yet this analysis has not been replicated in a large, independent sample. Also, most studies have not utilized the factors of sociotropy and autonomy for validation or prediction, and clarification of the correlates of these factors is needed. At the same time, other studies have suggested that sociotropy and autonomy may be composed

of two, rather than three, factors. Finally, sociotropy and autonomy may have dysfunctional as well as functional aspects that may impact the structure of the scales (Pincus & Gurtman, 1995; Rude & Burnham, 1995). To explore these alternatives and to improve our understanding of the SAS factors, we examined the structure of the scales in two samples of psychiatric outpatients.

Initially, a large sample of psychiatric outpatients was used to attempt to examine the factor structure of the entire SAS item pool. This was followed by a detailed analysis of the sociotropy and autonomy scales separately. The scales were examined separately to follow the previous work of Beck and colleagues (Beck et al., 1983) and to allow a more detailed examination of factor structure within each of the two scales. Next, confirmatory factor-analytic methods were used in a second sample to compare a newly derived factor solution with the previously reported factor structure. Finally, the correlations between newly derived factors of sociotropy and autonomy and various measures of psychopathology were computed.

METHOD

Participants

Participants were patients who were evaluated at the Center for Cognitive Therapy, University of Pennsylvania. All patients were diagnosed using DSM-III-R (American Psychiatric Association, 1987). The entire sample consisted of 2067 adult outpatients (18 years or older) who were seen between January 1986 and April 1994 (see Clark et al., 1997, for more information concerning this sample). Diagnoses were derived from the Structured Clinical Interview for DSM-III-R (SCID; Spitzer, Williams, Gibbon, & First, 1990) conducted by doctoral-level diagnosticians, who also rated patients on symptom measures. The mean age of the sample was 36.59 years ($SD = 11.51$). There were 1079 (52.2%) females and 988 (47.8%) males; 94.7% of the sample was white. This large sample was randomly divided into an "exploratory" ($n = 1034$) sample and a "confirmatory" sample ($n = 1033$).

Exploratory Sample

This sample was composed of the following primary diagnostic categories: mood disorders (47.7%), anxiety disorders (33.1%), adjustment disorders (5.6%), and psychoactive substance use disorders (2.5%). No remaining diagnostic group represented more than 1% of the sample. Finally, 44.8% of the sample received an Axis II diagnosis; 1.4% of the sample received a Cluster A diagnosis, 8.2% received a cluster B diagnosis, 26.8% of the sample received a Cluster C diagnosis, and 8.4% received an NOS Axis II diagnosis.

Confirmatory Sample

This sample was composed of the following primary diagnostic categories: mood disorders (48.9%), anxiety disorders (32.8%), adjustment disorders (5.7%), psychoactive substance use disorders (3.1%), and eating disorders (1.1%). No re-

maintaining diagnostic group represented more than 1% of the sample. Finally, 45.2% of this sample received an Axis II diagnosis; 2.8% of the sample received a Cluster A diagnosis, 8.1% received a cluster B diagnosis, 27.0% received a Cluster C diagnosis, and 7.2% received an NOS Axis II diagnosis.

Measures

Sociotropy–Autonomy Scale (SAS)

The Sociotropy–Autonomy Scale (SAS; Beck et al., 1983) contains 60 statements rated on 5-point scales ranging from 0 (0%) to 4 (100%). The 30-item sociotropy and autonomy Total Scales have high internal reliability as indicated by coefficient alphas of .90 and .83, respectively (Beck et al., 1983). The sociotropy scale has also been found to have moderate to good convergent validity with other measures of interpersonal dependency and affiliation, as well as with measures of psychopathology (Barnett & Gotlib, 1988; Bieling, Olshan, Beck, & Brown, 1998). However, the SAS autonomy scale displays inconsistent convergence with measures of achievement, independence, psychopathology, and vulnerability (Bieling, Olshan, Beck, & Brown, 1998; Clark & Beck, 1991).

Beck Depression Inventory (BDI)

The BDI is an efficient and widely used measure of depressive symptomology (Beck, Rush, Shaw, & Emery, 1979). The 21-item BDI has been shown to have high internal consistency and stability and has also been demonstrated to correlate highly with other self-report measures of depression and with clinicians' ratings of depression (Beck, Steer, & Garbin, 1988).

Beck Anxiety Inventory (BAI)

The 21-item BAI (Beck & Steer, 1990) measures symptoms of anxiety using 4-point scales (e.g., "heart pounding or racing," "fear of losing control"). The BAI has high internal consistency ($\alpha = .92$), good test–retest reliability (.73), and high convergent validity (Beck, Epstein, Brown, & Steer, 1988).

Beck Hopelessness Scale (BHS)

The BHS was developed to measure a broad spectrum of negative beliefs about the future (Beck & Steer, 1988). The BHS consists of 20 true–false statements about the immediate and long-term future. The BHS has high internal consistency ($\alpha = .90$) and adequate test–retest reliability ($r_s = .66$ – $.69$). The BHS has good convergent validity with clinical ratings of hopelessness ($r = .74$), other measures of pessimism (mean $r = .59$), and depression (mean $r = .59$) in large psychiatric samples (Beck & Steer, 1988).

Hamilton Depression and Anxiety Scales

The 17-item Hamilton Rating Scale for Depression (HRSD; Hamilton, 1960) and the 14-item Hamilton Anxiety Rating Scale (HARS; Hamilton, 1959) were

used by clinicians to rate the severity of anxiety and depression in the outpatients. Both instruments tend to emphasize the biological and behavioral symptoms of anxiety and depression, and have been used widely to classify patients as well as to assess symptom change with treatment (Williams, 1988).

RESULTS

Preliminary Analyses

Because the two samples in this study were randomly chosen from a larger sample, equality of the two groups was an important consideration. Results of independent t tests and chi-square analyses suggested that the two samples did not differ in terms of age, race, or education. A chi-square analysis indicated a significant difference in gender distribution; there were 5.4% more women in the confirmatory sample, $\chi^2(1, n = 2067) = 5.98, p < .05$. A series of independent-sample t tests suggested that the groups were not different on BDI, BAI, or BHS scores. However, significant differences emerged on the two Hamilton rating scales. The confirmatory sample had higher mean scores on the HRSD and HARS, $t(2065) = -2.86, p < .001$, and $t(2065) = -2.98, p < .001$, respectively. These differences, however, were quite small (means of 9.9 and 10.6 for the HRSD, and 11.9 and 12.9 for the HARS) and represented an effect size of only .12 standard deviations. Mean scores of the clinical measures for the entire sample are displayed in Table I.

Confirmatory Factor Analysis of Entire SAS Item Pool

In order to confirm the presence of two factors that represent the 60 items of the SAS scales, a two-factor model corresponding to sociotropy and autonomy was specified in the exploratory sample. When this two-factor CFA was attempted, the indices of fit were generally poor, $\chi^2(1644) = 6201.44, \chi^2/df = 3.77, GFI = .80, AGFI = .78, RMR = .13$. A similar level of fit ($GFI = .78$ and $AGFI = .76$) was reported by Bagby and colleagues (1998) for two factors in an alternative measure of sociotropy and autonomy. Because of the poor level of fit, we explored alternative

Table I. Mean Scores on Clinical Measures for the Entire Sample ($N = 2067$)

Variable	<i>M</i>	<i>SD</i>
BDI Total Score	17.80	(10.29)
BAI Total Score	15.81	(11.85)
BHS Total Score	9.06	(5.61)
HRSD Total Score	10.30	(6.08)
HARS Total Score	12.03	(7.90)

Note: BDI, Beck Depression Inventory; BAI, Beck Anxiety Inventory; BHS, Beck Hopelessness Scale; HRSD, Hamilton Rating Scale for Depression; HARS, Hamilton Anxiety Rating Scale.

numbers of factors that might provide a better fit to these items. When different numbers of factors were specified, ranging from 1 to 13 (which corresponded to eigenvalues >1 rule), none of the indices of fit offered substantial improvement. Again, these results parallel the Bagby et al. (1998) results in which neither a one-factor nor a six-factor solution to the PSI yielded a high degree of fit. These levels of fit suggest that the items of the SAS might require separate study to examine their internal structure.

Exploratory Factor Analysis of Sociotropy and Autonomy Items

Principal components analysis was used to examine the number of lower order factors in each of the 30-item scales (Sociotropy and Autonomy) in the initial sample ($n=1034$). Principal components extraction was utilized to account for as much of the variance as possible. In the first exploratory analyses, the number of factors was determined by size of eigenvalues, contribution of factors to variance explained, and the scree test (Cattell, 1966). Second, because three factors were originally identified for both sociotropy and autonomy by Beck and colleagues (1983), we also derived three-factor solutions for both sociotropy and autonomy in this sample.

Sociotropy

For sociotropy, the first five eigenvalues were 8.21, 2.93, 1.75, 1.39, and 1.28, accounting for 27.37%, 9.78%, 5.82%, 4.62%, and 4.25% of the variance, respectively. The extraction criteria suggested a two-factor solution for sociotropy accounting for 37.14% of the variance. Both orthogonal and oblique rotations were applied to the solution, and choice of rotation method was based on simple structure and interpretability (i.e., fewest cross-loading items, largest number of hyperplanar values). Comparison of pattern matrices suggested that an oblique rotation (oblimin) resulted in the most interpretable structure; the correlation between the two rotated factors was .25. For this and all subsequent exploratory analyses, an item was considered to be "on" a factor if it had a loading of at least .30 on only one of the factors. Based on this criterion, 2 items were dropped because of cross loading on both factors (item 27 and item 19). One item was dropped because of insufficient loading on either factor (item 18). The first sociotropy factor consisted of 16 items. Based on item content, this factor was termed Fear of Criticism and Rejection, and contained items focused on worry about the consequences of assertion, fear of social evaluation, and excessive social sensitivity. The second factor for sociotropy, termed Preference for Affiliation, consisted of 11 items related to a desire to be with other people and a valuing of intimacy.

The exploratory three-factor solution accounted for 42.97% of the variance, and this solution was rotated in the same manner as the two-factor solution. Generally, this three-factor solution was similar to the three-factor solution of Beck et al. (1983). The three factors identified corresponded to Concern About Dis-

approval, Attachment/Concern About Separation, and Pleasing Others.⁴ The correlations between the three factors identified were as follows: Concern About Disapproval and Attachment/Concern About Separation, $r = .24$; Concern About Disapproval and Pleasing Others, $r = .33$; Attachment/Concern About Separation and Pleasing Others, $r = .07$. However, 7 of the 30 items had significant cross-loadings on two factors, regardless of method of rotation (items 8, 17, 34, 47, 50, 58, and 59). Four of the seven items loaded about equally on Concern About Disapproval and Attachment/Concern About Separation. Further, 2 items previously found to load on Attachment/Concern About Separation were found to load on Concern About Disapproval (item 19 and item 26). One item previously loading on Concern About Disapproval was found to load on Pleasing Others in the present solution (item 33), and another item (56) switched from Pleasing Others to Concern About Disapproval. In summary, although the three factors extracted were similar to the three factors originally identified by Beck et al. (1983), 4 items “switched” factors in the present solution and 7 were dropped because of cross-loadings.

Autonomy

For autonomy the first six eigenvalues were 5.47, 2.91, 1.69, 1.65, 1.27, and 1.16, accounting for 18.23%, 9.69%, 5.64%, 5.49%, 4.25%, and 3.86% of the variance, respectively. The extraction criteria suggested a two-factor solution for autonomy, accounting for 27.92% of the variance. Again, both oblique and orthogonal rotations were applied, and an oblique (oblimin) rotation resulted in the best simple, interpretable structure. The correlation between the two factors was .24. Based on the criterion of .30 or greater loading on a single factor, 1 item was dropped because of cross-loading on both factors (item 2) and another item was dropped because of insufficient loading on either factor (item 37). The first autonomy factor consisted of 11 items. Based on item content, this factor was termed Independent Goal Attainment and contained items focused on positive assertion, independence from others, and striving toward goals. The second factor for autonomy, termed Sensitivity to Others' Control, consisted of 17 items that focused on fear of intrusion, need to control oneself at all times, and desire for solitude.

The three-factor solution accounted for 33.56% of the variance. Again, the three-factor solution was very similar to the solution of Beck et al. (1983). The three factors identified corresponded to Individualistic Achievement, Mobility/Freedom from Control by Others, and Preference for Solitude. The correlations between the three factors were as follows: Individualistic Achievement and Preference for Solitude, $r = -.22$; Individualistic Achievement and Mobility/Freedom from Control, $r = .17$; Preference for Solitude and Mobility/Freedom from Control, $r = -.23$. Also, 1 item loaded on two of the factors (item 2) and 2 items had insufficient loadings on any factor (item 22 and item 25). These 3 items were discarded for the confirmatory analyses. All other items loaded on the same factor in the present solution as in the original solution (Beck et al., 1983).

⁴The full complement of items and loadings for the exploratory three-factor solutions in sociotropy and autonomy is available on request, but is omitted here for brevity.

Confirmatory Factor Analysis of Sociotropy and Autonomy Items

Sociotropy

In order to compare the fit of the various solutions to one another, confirmatory factor analysis was used in the second sample ($n = 1033$). Three models were constructed: (1) The two-factor solution derived from the exploratory analysis, with 16 items loading on Fear of Criticism and Rejection and 11 items loading on Preference for Affiliation (recall that 3 items were dropped because of insufficient or cross-loadings), (2) the three-factor solution identified by the exploratory analysis with 10 items loading on Concern About Disapproval, 6 items loading on Attachment/Concern About Separation, and 7 items loading on Pleasing Others (recall that a total of 7 items were dropped based on the exploratory analysis), and (3) the three-factor solution identified originally in the 1983 study, with 10 items loading on Concern About Disapproval, 13 items loading on Attachment/Concern About Separation, and 7 items loading on Pleasing Others (Beck et al., 1983).

The three models were then compared on both parsimony and goodness of fit to the data. The AMOS (Arbuckle, 1992) statistical package with maximum-likelihood estimation was used to examine the three models. Because the variables in the analysis (SAS items) are measured by the same method, items may share systematic variance that is not related to the underlying constructs of interest (Burns & Eidelson, 1998). Therefore, model modification indices were utilized in each model to allow 5% of possible error term correlations following Tanaka and Huba (1984).⁵ A number of goodness-of-fit indices and measures of parsimony for each solution were then compared to ensure that the most appropriate model was chosen (Mulaik et al., 1989). The subjective indices of goodness of fit included the χ^2 test, χ^2/df , goodness-of-fit index (GFI), the adjusted-goodness-of-fit index (AGFI), and the root mean square residual (RMR) statistics generated by AMOS. Measures of parsimony that assess both model fit and the number of constraints required (efficiency of the model) included the Aikake Information Criteria (AIC; Aikake, 1987), Browne–Cudeck Criterion (BCC; Browne & Cudeck, 1989), and Consistent Aikake Information Criteria (CAIC; Bozdogan, 1987).

The majority of the goodness-of-fit indices indicated that the two-factor solution, $\chi^2(306) = 1309.61$, $\chi^2/df = 4.28$, GFI = .91, AGFI = .89, RMR = .16, provided an equivalent fit to the data compared to the three-factor model derived from the exploratory analysis, $\chi^2(217) = 1203.53$, $\chi^2/df = 5.55$, GFI = .91, AGFI = .89, RMR = .22, and a better fit than the originally derived three-factor solution, $\chi^2(383) = 2380.89$, $\chi^2/df = 6.22$, GFI = .86, AGFI = .83, RMR = .25.⁶ Indices of parsimony indicated that the exploratory derived three-factor model (AIC = 1321.53, BCC = 1324.34, CAIC = 1672.00) was slightly superior to the two-factor

⁵This approach might be considered conservative, as Tanaka and Huba (1984) allowed a larger proportion of error terms to correlate, “reflecting minor, possibly sample-specific, data covariation that is not accounted for by the major constructs of a model” (Tanaka & Huba, 1984, p. 634).

⁶For the two-factor sociotropy model, the average correlation between error terms was .20 ($SD = .07$, range .09–.33), for the exploratory derived three-factor sociotropy model the average error term correlations was .18 ($SD = .07$, range .10–.32), and for the original three-factor sociotropy solution the average error term correlation was .18 ($SD = .06$, range .13–.35).

Table II. Standardized Item to Factor Parameter Estimates in the Two-Factor Confirmatory Solution for Sociotropy and Autonomy

	Loading
Sociotropy items	
Fear of criticism and rejection	
47. It is important to me to be liked and approved by others.	.71
44. I am uneasy when I cannot tell whether or not someone I've met likes me.	.68
24. I get uncomfortable when I am not sure how I am expected to behave in the presence of other people	.65
29. I get uncomfortable around a person who does not clearly like me.	.65
33. I censor what I say because I am concerned that the other person may disapprove or disagree	.64
11. I am concerned that if people knew my faults or weaknesses they would not like me.	.61
50. When I am with other people, I look for signs whether or not they like being with me.	.61
46. I am more apologetic to others than I need to be.	.58
38. If somebody criticizes my appearance, I feel I am not attractive to other people.	.56
17. I am more concerned than people like me than I am about making important achievements.	.55
5. I am afraid of hurting other people's feelings.	.54
7. I find it difficult to say "no" to other people.	.53
15. I do things that are not in my best interest in order to please others.	.53
52. If I think somebody may be upset with me, I want to apologize.	.49
1. I feel I have to be nice to other people.	.47
56. I feel uncomfortable being a nonconformist.	.45
Preference for affiliation	
31. I find it difficult to be separated from people I love	.62
35. I often find myself thinking about friends or family.	.60
34. I get lonely when I am home by myself at night.	.57
53. I like to be certain that there is somebody close I can contact in case something unpleasant happens to me.	.54
49. Having close bonds with other people makes me feel secure.	.50
59. I worry that somebody I love will die.	.50
58. The worst part about growing old is being left alone.	.47
8. I feel bad if I do not have some social plans for the weekend.	.45
26. It would not be much fun for me to travel to a new place all alone.	.44
40. I like to spend my free time with others.	.42
4. Being able to share experiences with other people makes them much more enjoyable for me.	.39
Autonomy items	
Independent Goal Attainment	
30. If a goal is important to me I will pursue it even if it may make other people uncomfortable.	.60
60. The possibility of being rejected by others for standing up for my rights would not stop me.	.60
45. I set my own standards and goals for myself rather than accepting those of other people.	.57
12. If I think I am right about something, I feel comfortable expressing myself even if others don't like it.	.55
14. It is more important to meet your own objectives on a task than to meet another person's objective.	.55
32. When I achieve a goal I get more satisfaction from reaching the goal than from any praise I might get.	.52
3. It is more important that I know I've done a good job than having others know it.	.48
48. I enjoy accomplishing things more than being given credit for them.	.47

Table II. (Continued)

	Loading
Sociotropy items	
39. It is more important to get a job done than to worry about people's reactions.	.47
9. I prize being a unique individual more than being a member of a group.	.45
20. I am not influenced by others in what I decide to do.	.41
Sensitivity to Others' Control	
55. I don't like people to invade my privacy.	.61
21. It is very important that I feel free to get up and go where ever I want.	.53
42. When I have a problem, I like to go off on my own and think it through rather than being influenced by others.	.53
36. I prefer to make my own plans, so I am not controlled by others.	.52
41. I don't like to answer personal questions because they feel like an invasion of my privacy.	.50
54. I feel confined when I have to sit through a long meeting.	.47
28. It is more important to be active and doing things than having close relationships with other people.	.44
43. In relationships, people often are too demanding of each other.	.44
6. It bothers me when people try to direct my behavior or activities.	.41
10. When I feel sick, I like to be left alone.	.39
13. When visiting people, I get fidgety when sitting around talking and would rather get up and do something.	.38
23. I find it is of importance to be in control of my emotions.	.32
16. I like to take long walks by myself.	.32
51. I like to go off on my own, exploring new places—without other people.	.31
57. The worst part about being in jail would be not being able to move around freely.	.30
25. I feel more comfortable helping others than receiving help.	.25
22. I value work accomplishments more than I value making friends.	.24

model (AIC = 1453.61, BCC = 1457.62, CAIC = 1881.30) and both these models were superior to the original three-factor model (AIC = 2544.89, BCC = 2549.97, CAIC = 3031.99). The two-factor solution was an equivalent fit to the empirically derived three-factor model and provided a better fit than the originally derived three-factor model. However, the two-factor model retained a larger number of the SAS items. The standardized item to factor parameter estimates for the two-factor confirmatory solution are displayed in Table II.

Autonomy

The factor solution obtained for the autonomy items in the exploratory analysis was also compared to other possible solutions with confirmatory methods. Three potential solutions were generated and compared in the confirmatory sample: (1) The two-factor solution identified in the initial sample with 17 items loading on Sensitivity to Others' Control and 11 items loading on Independent Goal Attainment (recall that 2 items were dropped in the exploratory analysis). (2) The empirically derived three-factor solution with 11 items loading on Individualistic Achievement, 11 items loading on Mobility/Freedom From Control, and 5 items loading on Preference For Solitude (3 items were dropped based on the exploratory analysis). (3) The three-factor solution identified in the initial validation study with 12 items loading on Individualistic Achievement, 12 items loading on Mobility/Freedom from Control, and 6 items loading on Preference for Solitude, (Beck et al., 1983).

The three models were then compared using procedures identical to those used for sociotropy models.

The majority of the goodness-of-fit indices indicated that the two-factor solution, $\chi^2(331) = 1148.09$, $\chi^2/df = 3.47$, GFI = .93, AGFI = .91, RMR = .09, provided a somewhat superior fit to the data compared to the three-factor model derived from the exploratory analysis, $\chi^2(306) = 1231.74$, $\chi^2/df = 4.03$, GFI = .92, AGFI = .89, RMR = .12, and a better fit than the original three-factor model, $\chi^2(383) = 1558.57$, $\chi^2/df = 4.07$, GFI = .90, AGFI = .88, RMR = .12.⁷ Indices of parsimony also indicated that the two-factor model (AIC = 1298.09, BCC = 1302.43, CAIC = 1743.61) was superior to the exploratory three-factor model (AIC = 1375.74, BCC = 1379.73, CAIC = 1803.43) and the original three-factor model (AIC = 1722.57, BCC = 1727.65, CAIC = 2209.67). Thus, the two-factor model of autonomy provided a somewhat better and more parsimonious fit to the data than either of the three-factor models. The standardized item to factor parameter estimates of the two-factor confirmatory solution are displayed in Table II.

Psychopathology Correlates of the Sociotropy Factors

In order to further examine the two factors of sociotropy, two subscales were created in the entire sample ($N = 2067$). The subscales were created with unit weighting of items from the two-factor confirmatory analysis. Descriptive information concerning correlations and means of the SAS subscales is provided in Table III. For the sociotropy scale, the two subscales were Fear of Criticism and Rejection (16 items) and Preference for Affiliation (11 items). Alpha reliabilities in the confirmatory sample were .90 and .79, respectively.

Subsequently, correlations were computed between each of these two subscales as well as the entire sociotropy scale and five common measures of psychopathology, including the BDI, BAI, BHS, HRSD, and HARS. As indicated in Table IV, both Fear of Criticism and Rejection and Preference for Affiliation had moderate positive

Table III. Correlations and Means of the Sociotropy and Autonomy Scales and Subscales ($N = 2067$)

Correlations	1	2	3	4	5	<i>M</i>	(<i>SD</i>)
1. Fear of Criticism and Rejection	—					38.81	(11.82)
2. Preference for Affiliation	.37*	—				27.57	(7.52)
3. Independent Goal Attainment	-.44*	-.12*	—			26.22	(6.82)
4. Sensitivity to Others' Control	.26*	-.07	.28*	—		38.50	(9.22)
5. Sociotropy	.89*	.74*	-.38*	.16*	—	72.37	(18.29)
6. Autonomy	-.06	.15	.73*	.85*	-.12*	69.91	(13.82)

Note. $N = 2067$. Range for Independent Goal Attainment and Preference for Affiliation is 0–44, range for Fear of Criticism and Rejection is 0–64, and range for Sensitivity to Others' Control is 0–68. Range for both Sociotropy and Autonomy is 0–120.

* $p < .001$.

⁷For the two-factor autonomy model, the average correlation between error terms was .23 ($SD = .11$, range .09–.42), for the exploratory derived three-factor autonomy model the average error term correlation was .24 ($SD = .10$, range .13–.46), and for the original three-factor autonomy model the average error term correlation was .25 ($SD = .12$, range .11–.45).

Table IV. Correlations of the Sociotropy and Autonomy Subscales with Measures of Psychopathology in the Entire Sample

	F	P	<i>z</i> (F vs. P)	Sociotropy
Beck Depression Inventory	.40**	.25**	6.58**	.42**
Beck Anxiety Inventory	.28**	.33**	-2.15	.37**
Beck Hopelessness Scale	.38**	.17**	8.95**	.36**
HRSD	.35**	.19**	6.81**	.35**
HARS	.24**	.26**	- .83	.30**
	I	S	<i>z</i> (I vs. S)	Autonomy
Beck Depression Inventory	-.19**	.19**	-14.37**	.02
Beck Anxiety Inventory	-.12**	.12**	-9.04**	.01
Beck Hopelessness Scale	-.26**	.13**	-14.83**	-.06
HRSD	-.19**	.11**	-11.35**	-.04
HARS	-.11**	.10**	-7.92**	-.01

Note: $N = 2067$; F, Fear of Criticism and Rejection; P, Preference for Affiliation; I, Independent Goal Attainment; S, Sensitivity to Others' Control; HRSD, Hamilton Depression Rating Scale; HARS, Hamilton Anxiety Rating Scale.

** $p < .001$.

and significant correlations with psychopathology. The sociotropy scale also correlated moderately with all five measures of psychopathology, and the magnitude of these correlations were similar to those for the two subscales. Differences between the correlations of the Fear of Criticism and Rejection and Preference for Affiliation subscales with the various measures of psychopathology were computed using the z statistic (Meng, Rosenthal, & Rubin, 1992). This statistic takes into account the differences between two correlations and the overlap of variance between two interrelated correlations (Meng et al., 1992). A Bonferroni correction was applied to significance tests ($p_{\text{crit}} < .01$) for each of the five comparisons. As displayed in Table IV, Fear of Criticism and Rejection showed a stronger relationship with the BDI, BHS, and HRSD than did Preference for Affiliation.

Psychopathology Correlates of the Autonomy Factors

In order to further examine the two factors of autonomy, two subscales were created in the entire sample ($N = 2067$). Again, a total score for the subscales was computed with unit weighting of the items from the two-factor confirmatory analysis. Descriptive information is displayed in Table III. For autonomy, the two subscales were called Independent Goal Attainment (11 items) and Sensitivity to Others' Control (17 items). In the entire sample the alpha reliabilities of Independent Goal Attainment and Sensitivity to Others' Control were .82 and .78, respectively.

Correlations were computed between each of these two subscales (Independent Goal Attainment, Sensitivity to Others' Control) as well as for the entire autonomy scale and the measures of psychopathology. As displayed in Table IV, for Independent Goal Attainment, the correlations with all five measures of psychopathology were negative and significant. For Sensitivity to Others' Control, there were small, but significant positive correlations with all five measures of psychopathology. Utilizing the z statistic and a Bonferroni correction ($p_{\text{crit}} < .01$), we found that all five

differences between correlations were significant. This suggests that Independent Goal Attainment and Sensitivity to Others' Control have different relationships with measures of psychopathology. Independent Goal Attainment appears to be negatively related to psychopathology, whereas Sensitivity to Others' Control has some positive relationships with psychopathology. Interestingly, the 30-item autonomy scale had virtually no relationship to psychopathology.

DISCUSSION

The results of both exploratory and confirmatory analyses suggested that the items of the sociotropy and autonomy scales can be adequately described by two factors for each scale. Initial exploratory analyses suggested the extraction of two subfactors for both the sociotropy and autonomy scales, with the resulting pattern of loadings capturing the item content as well as a three-factor solution. In the two-factor solutions there were fewer cross-loading items or nonloading items; a total of 5 items did not load adequately in the two-factor solutions, compared to 10 such items in the three-factor solutions. Further, for autonomy, a two-factor solution, when compared with two different three-factor solutions, seemed to provide a somewhat better and more parsimonious fit to the data of a second independent sample. For sociotropy, the two-factor solution was equivalent in its level of fit to a three-factor solution. The two factors identified for sociotropy appear to assess a Preference for Affiliation and a Fear of Criticism and Rejection. For autonomy, the two factors assess desire for Independent Goal Attainment and Sensitivity to Others' Control.

For both sociotropy and autonomy, the fit of the two-factor solutions was equivalent or superior to the three-factor solutions. The present solutions blend two of the three factors identified in the original factor analysis (Beck et al., 1983). For example, Concern About Disapproval and Pleasing Others, two separate factors in the initial study, were blended into a single factor in the present solution. Despite these differences, the present findings for sociotropy are still quite consistent with the original solution (Beck et al., 1983).

Comparison of the two factors derived from the present results show some striking similarities with factors previously identified. Preference for Affiliation and Fear of Criticism and Rejection correspond with "connectedness" and "neediness" as identified by Rude and Burnham (1995). Furthermore, the two sociotropy factors are similar to those reported by Blatt and colleagues using the dependency scale of the DEQ. These researchers found a dependence facet marked by "fear of desertion and abandonment" that is similar to Fear of Criticism and Rejection and a facet called "interpersonal relatedness" that bears a resemblance to Preference for Affiliation (Blatt et al., 1995). Finally, the factors for sociotropy identified here appear to be similar to those factors identified by Sato and McCann (1997). Their "sensitivity" and "attachment" factors appear to be similar to Fear of Criticism and Rejection and Preference for Affiliation, respectively.

Overall, both of the sociotropy factors were more strongly and positively correlated with psychopathology than were the autonomy factors. Examination of the

two sociotropy factors could not be said to have produced a “functional” and “dysfunctional” variant of sociotropy. Indeed, despite the differential association of the two sociotropy factors with depression, neither of the two sociotropy factors offered an improvement in the prediction of psychopathology compared to the overall sociotropy scale.

For autonomy, the two-factor solution also has parallels with other factor structures previously identified. For example, the factor named Mobility/Freedom from Control combined with Preference for Solitude in the original Beck et al. (1983) solution to form a single factor here termed Independent Goal Attainment. The two factors identified for autonomy in this study are similar to at least one previous study in which the items of the PSI and SAS-R were combined. Sato and McCann (1997) identified a “control” factor and an “achievement” factor that appear to correspond to Sensitivity to Others’ Control and Independent Goal Attainment in autonomy. The final factor identified in the Sato and McCann solution related to autonomy, “insensitivity,” was not identified here. One possible explanation is that their “insensitivity” factor was in fact largely comprised of autonomy items that were specifically written for the revised SAS and are not part of the original scale. Interestingly, only one of the two factors identified here for SAS autonomy (Sensitivity to Others’ Control) is similar to the factors of the PSI (Need for Control and Defensive Separation) identified by Bagby and colleagues (1998). This may well be because the PSI was constructed in part as an answer to concerns that the SAS assesses “a relatively healthy type of autonomous striving” (Robins et al., 1994, p. 280). Given this, it is not surprising that Independent Goal Attainment would be specific to the SAS items.

For the autonomy subscales, a distinctive pattern of correlations emerged with the psychopathology measures. The factor Sensitivity to Others’ Control was, as expected, minimally, but positively associated with psychopathology. The factor Independent Goal Attainment was negatively associated with psychopathology, suggesting that this factor may be associated with better adjustment. These patterns of correlations argue for the use of this two-factor solution rather than a three-factor solution or a unitary approach. Both of the latter approaches may have obscured this pattern of divergent correlations and led researchers to conclude that autonomy is unrelated to psychopathology.

A conceivable explanation of these two-factor structures is the wording of the SAS items (Solomon & Haaga, 1994). In other words, the positive items of sociotropy or autonomy could load on one factor, with the negatively worded items loading on another. However, a distinction between positive and negative wording appears to account for only some of the differences between the factors. The two autonomy and sociotropy factors differed more in terms of fundamental item content and connotation than they differed in positive or negative wording.

Implications

These two-factor solutions have important implications for researchers investigating these personality modes. In typical studies of this diathesis-stress model, individuals who are sociotropic are theorized to be vulnerable to depression when

they suffer a perceived loss within the interpersonal realm, whereas individuals high in autonomy are thought to be vulnerable to setbacks in achievement realms (Robins, 1990). The results of this study, especially with regard to autonomy, may explain why these personality variables have not been found consistently to interact with negative life events to produce depression (see Clark et al., 1999, for a review). First, recall that the overall autonomy scale had a near-zero relationship with psychopathology, and would therefore be unlikely to interact with life events to predict depression. Second, the events that have previously been considered most relevant for the autonomy construct are achievement failures. The current findings add new specificity to this prediction. Based on our results, one would predict that events which *undermine self-determination* would seem to be of primary importance to those who are sensitive to the control of others. Whether or not an achievement event undermines self-determination would thus require not only measures of stressful life events, but also appraisals of those life events. Similarly, in sociotropy, those individuals who score high on Fear of Criticism and Rejection are likely to be primarily affected by events that are interpreted as rejection rather than negative interpersonal events in general.

Finally, the significance of the Independent Goal Attainment factor of the autonomy scale should be of considerable interest to psychopathology and coping researchers. It is possible that this factor of autonomy may indicate a degree of resistance to or buffering against stressors and predict less dysfunction. Indeed, in one study, overall autonomy scores appeared to serve in this “event buffering role” (Robins & Block, 1988, p. 851). Moreover, if this factor is related to healthy functioning, it may be related to more positive treatment outcome. Results from a recent study suggest that Independent Goal Attainment increases over the course of cognitive therapy and that increases in this factor are correlated with decreases in depression scores (Bieling, Beck, & Brown, 1998).

Limitations

One limitation of this study is that the factor structure derived in the current sample may not generalize to nonpsychiatric settings. This factor structure therefore requires replication in other samples. These results also point to some remaining problems within the SAS. The overall negative valence of the sociotropy items, especially compared to the autonomy items, suggests that the items themselves are not balanced in terms of wording. Future revision of the items should focus on equalizing the number of items with negative wording rather than expanding the number of factors or facets of each scale. Alternatively, it is possible that the construct of autonomy is simply less associated with vulnerability to psychopathology or that only some aspects of autonomy have negative consequences. Assuring that the sociotropy and autonomy items have similar valence would allow a test of this possibility. If the items on each scale were similarly balanced in terms of negative and positive content, a more accurate picture of each construct’s association with psychopathology would emerge.

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PSYCHOMETRIC CHARACTERISTICS OF REVISED SOCIOTROPY AND AUTONOMY SCALES IN COLLEGE STUDENTS

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Summary—Beck, Epstein, Harrison and Emery (unpublished manuscript, 1983) developed the Sociotropy–Autonomy Scale (SAS) to assess personality constructs that were considered possible vulnerability factors to reactive depression. Principal components and factor analyses of an expanded 93-item version of the SAS were performed with successive samples of undergraduates totalling 2041 Ss. Only 59 items were needed to establish the generalizabilities of one dimension of Sociotropy and two dimensions of Autonomy. Three subscales reflecting Sociotropy, Solitude and Independence were constructed from these items. The convergent and discriminant validities of the three subscales were assessed with respect to a variety of other psychological tests. The overall pattern of relationships indicated that Solitude was positively correlated with dysphoria, perfectionism, self-criticalness, and loneliness. In contrast, Independence was positively correlated with perfectionism and self-efficacy, but inversely related to concern about approval from others. Sociotropy was correlated with dependency, self criticalness, and affiliation motivation. The findings supported the construct validity of the three revised SAS subscales.

INTRODUCTION

In Beck's cognitive model of depression (Beck, 1983, 1987) the personality constructs of sociotropy and autonomy are considered distal contributors to reactive depression. Sociotropy refers to an investment in positive interactions with others, with highly sociotropic individuals placing excessive value on close interpersonal relationships and believing they must be loved and accepted by others. On the other hand, autonomy reflects an investment in preserving independence, mobility, and freedom of choice. Highly autonomous individuals believe that they must demonstrate superior levels of accomplishment and self-control to demonstrate their sense of mastery and independence. According to Beck's cognitive diathesis-stress model of depression, highly sociotropic individuals are more likely to develop depression in response to life stressors that are perceived as involving a possible loss of social resources. In contrast, autonomous individuals are more susceptible to depression in situations that involve a threat to independence and goal-directed behaviour (Beck, 1983, 1987, 1991).

To assess sociotropy and autonomy, Beck and his associates (Beck, Epstein, Harrison & Emery, 1983) developed a 60-item Sociotropy–Autonomy Scale (SAS). Item construction was derived from patient self-reports and clinical material collected from therapists at the Center for Cognitive Therapy in Philadelphia (Beck & Epstein, 1982). An item analysis conducted with 378 psychiatric outpatients led to the retention of 30 sociotropic items and 30 autonomous items (Beck *et al.*, 1983). A number of studies have examined the construct validity of the SAS Sociotropy and Autonomy Total Scales, and convergent and discriminant validity has been found for the Sociotropy scale. The scale correlates with other measures of interpersonal dependency, such as the Depressive Experiences Questionnaire's (DEQ) Dependency Scale (Blaney & Kutcher, 1991; Robins, 1985) and the Dysfunctional Attitudes Scale's Approval By Others subscale (Barnett & Gotlib, 1988), as well as measures of anxiety and depression (Barnett & Gotlib, 1988; Clark & Beck, 1991; Gilbert &

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Reynolds, 1990; Philon, 1989). However, SAS Sociotropy also has a moderate correlation with measures of neuroticism or negative affectivity (Clark & Beck, 1991; Gilbert & Reynolds, 1990; Cappeliez, 1993).

The construct validity of the SAS Autonomy scale is more equivocal. The Autonomy scale yields low correlations with measures of related personality constructs, such as the Personality Research Form–Autonomy Scale (Clark & Beck, 1991), the DEQ's Self-Criticism Scale (Blaney & Kutcher, 1991; Robins, 1985), the DAS' Performance Evaluation scale (Barnett & Gotlib, 1988; Blaney & Kutcher, 1991), or the NEO's Personality Inventory–Conscientiousness scale (Cappeliez, 1993). On the other hand, Barnett and Gotlib (1988) reported that SAS Autonomy scale and the autonomy subscales of the Personality Research Form and the Interpersonal Dependency Inventory were moderately correlated with one another. However, SAS Autonomy has consistently shown minimal association with depression measures (Clark & Beck, 1991; Gilbert & Reynolds, 1990; Philon, 1989; Robins, 1985).

Studies investigating Beck's cognitive diathesis-stress model of depression have produced mixed results for the main effects or interaction of autonomy with negative achievement events in predicting depressive symptoms (Clark, Beck & Brown, 1992; Robins & Block, 1988). Consequently, several researchers have called for psychometric refinements in the SAS Autonomy Scale (Barnett & Gotlib, 1988; Robins & Block, 1988). In response, Clark and Beck (1991) reported on an expanded version of the SAS involving the addition of 33 new autonomy items to the original 60 SAS items. They found a moderate association between dysphoria and one feature of the autonomous personality, Preference For Solitude. However, Clark and Beck (1991) cautioned that the 93-item version of the SAS required further psychometric evaluation.

The purposes of the present study were (a) to develop revised factor-based scales from the 93 item pool of the SAS, (b) to provide preliminary normative data on three SAS subscales that were derived from the expanded SAS, and (c) to determine the convergent and discriminant validity of the revised SAS subscales with respect to other self-report measures of personality vulnerability to depression.

METHODS

Subjects

Four different samples of undergraduate students were drawn from consecutive years of Introductory Psychology classes at the University of New Brunswick, Canada. Sample 1 consisted of 439 students (273 women, 148 men) with a mean age of 19.29 (SD = 3.51) years.* The second sample involved 582 students (304 women, 169 men) with a mean age of 20.59 (SD = 7.31) years. The third sample involved 526 students (320 women, 202 men) with a mean age of 19.93 (SD = 6.15) years, whereas the fourth sample consisted of 494 *S*s (298 women, 195 men) with a mean age of 19.10 (SD = 2.26) years. The samples were primarily composed of Caucasian first-year students.

Procedure

The *S*s were administered a battery of instruments in large groups. After signing a consent form, they were instructed about how to use optical scanning sheets for recording their responses. All of the students received course credit for participating in the study.

Instruments

The first two samples completed the 93-item version of the SAS (Clark & Beck, 1991). The third and fourth samples, which were used for validation purposes, were administered the 59-item version of the SAS that was derived from principal factor analyses that were performed with the first two samples. To evaluate the convergent and discriminant validities of the 59-item revised SAS, the Beck Depression Inventory, Depressive Experiences Questionnaire, and Multidimensional Perfectionism Scale were also administered to the third sample, whereas the Interpersonal Orientation

*Because of missing data, *n*'s vary slightly across variables.

Scale, Social and Emotional Loneliness Scale, and Personal Style Inventory were administered to 267 Ss from the fourth sample.

Beck Depression Inventory (BDI). The 21-item BDI (Beck & Steer, 1987) was administered to assess the severity of depressive symptoms. Reliability and validity data supporting the BDI's use with student samples can be found in a number of studies (Beck, Steer & Garbin, 1988; Bumberry, Oliver & McClure, 1978).

Depressive Experiences Questionnaire (DEQ). The DEQ (Blatt, D'Afflitti & Quinlan, 1976; Zuroff, Quinlan & Blatt, 1990) is a 66-item questionnaire designed to assess three dimensions of depressive experience considered relevant to all depressions ranging from normal mood variations to severe clinical states. Two of the dimensions assessed by the DEQ, Dependency and Self-Criticism, are considered possible vulnerability factors for depression (Blatt & Zuroff, 1992; Blaney & Kutcher, 1991). Scores for the three dimensions of the DEQ, Dependency, Self-Criticism, and Self-Efficacy, were derived from the factor score coefficients of the original female sample reported by Blatt, D'Afflitti and Quinlan (1979). Various empirical studies found significant correlations between Self-Criticism and, to a lesser extent, Dependency, and depression (Blatt, Quinlan, Chrevon, McDonald & Zuroff, 1982; Klein, Harding, Taylor & Dickstein, 1988; Robins, 1985).

Multidimensional Perfectionism Scale (MPS). The 45-item MPS (Hewitt & Flett, 1991a, 1991b) assesses perfectionism, another personality construct thought to play an important role in depression. Three dimensions of perfectionism assessed by the MPS are Self-Oriented, Other-Oriented, and Socially Prescribed Perfectionism. Evidence of adequate construct validity for Self-Oriented, Socially Prescribed and, to a lesser extent, Other-Oriented Perfectionism has been reported for both clinical and nonclinical samples (Hewitt & Flett, 1991a, b; Hewitt, Flett, Turnbull-Donovan & Mikail, 1991).

Interpersonal Orientation Scale (IOS). The 26-item IOS (Hill, 1987) measures four dimensions of affiliation motivation that constitute potential sources of gratification for interpersonal contact. Six items assess Emotional Support, which involves looking to others for sympathy and lifting one's spirits, whereas Attention involves enhancing self-worth and importance through obtaining the praise and attention of others. Nine items assess Positive Stimulation which is concerned with obtaining enjoyable affection and cognitive stimulation from interpersonal contacts. Finally, five items assess Social Comparison, or the desire to compare one's self with others to reduce ambiguity about one's performance. Hill (1987) reported correlations with other personality measures that supported the construct validity of the four IOS subscales.

Social and Emotional Loneliness Scale (SELSA). The 37-item SELSA (DiTommaso & Spinner, 1993) was given as a multidimensional measure of loneliness. Two subscales assess emotional loneliness, described as the absence of close attachment relationships in the Family and in Romance. The third subscale measures Social Loneliness described as the presence of an inadequate social network. All three subscales have good internal consistency and correlate with the UCLA Loneliness Scale, with the Social Loneliness subscale having the highest correlation ($r = 0.79$) with this measure (DiTommaso & Spinner, 1993).

Revised Personal Style Inventory (PSI). The 48-item revised PSI (Robins, Ladd, Welkowitz, Blaney, Diaz & Kutcher, 1993) was administered as an alternative self-report measure of sociotropy and autonomy. Ss respond to items on a 1 ("strongly disagree") to 6 ("strongly agree") scale. The 24 Sociotropy items assess three interpersonal constructs; excessive concerns about what others think, dependency, and pleasing others. The Autonomy items assess constructs of excessive perfectionism/self-criticalness, need for control and defensive separation from others. Many of the items for the PSI were drawn from existing personality measures including the SAS, DAS, DEQ, and others. Robins *et al.* (1993) provide preliminary psychometric information supporting the construct validity of the PSI.

RESULTS

Factor analyses

We employed a series of principal component and factor analyses across three student samples to select a smaller subset of salient SAS items (Comrey, 1988; Gorsuch, 1983). Because factor

loadings of items are strongly influenced by sample characteristics, factor solutions of the same item set can vary across samples (Armstrong & Soelberg, 1968; Kim & Mueller, 1978). To maximise the likelihood of selecting a reliable and salient set of SAS items, we retained only items that consistently loaded >0.30 across various factor analyses.

Separate principal-factor analyses with varimax rotations were first conducted with the 93-item SAS for samples 1 and 2.* Cattell's (1966) scree test indicated that only four factors should be retained for each sample. Fifty-nine items were retained with salient loadings >0.30 on the same factor in both samples, and these items were next entered into a principal components with varimax rotation employing the combined samples 1 and 2 ($N = 829$).† Although Cattell's (1966) scree test now indicated that either a four or six component solution might be viable, we calculated Kaiser's coefficient alpha of generalizability (Kline & Barrett, 1983) and found that the coefficient dropped below 0.70 after three components were extracted. It was concluded from this that only the first three components were sufficiently stable to retain in the solution.

In the principal components analysis of the 59 SAS items, all 29 of the sociotropy items that Clark and Beck (1991) had identified also loaded saliently on our Sociotropy component. The second component, Solitude, consisted of 12 items that reflected aspects of solitude and one item, "I am reluctant to ask for help when working on a difficult and puzzling task", which Clark and Beck (1991) had reported as loading on an Independence component. The third component, Independence, was composed of 17 items representing items related to individualistic achievement and independence. The three components, respectively, accounted for 12.6, 7.4, and 6.2% of total variance and had Cronbach coefficient alphas of 0.88, 0.78, and 0.74, respectively.

The generalizability of the 59-item SAS structure was examined by performing a principal component analysis with varimax rotation on the third sample ($N = 476$ after listwise deletion of missing data). As seen in Table 1, the three components now explained 12.7, 7.2, and 6.0% of the total variance, respectively.

To determine whether the structure obtained with the third sample replicated the solution that was found for samples 1 and 2 together, we used a factor matching procedure described by Kaiser, Hunka and Bianchini (1971). The mean cosine between the two sets of structures was 0.97; the cosine value may here be interpreted as a correlation coefficient. Therefore, the two solutions were highly similar. The cosines between the components in both samples representing the same SAS content domains were all equal to 0.99, and the cosines between the nonmatching components representing different content domain approached zero. Individual item comparisons revealed that only 7 (24%) Sociotropy items, 3 (23%) Solitude, and 2 (12%) Independence items failed to load on their expected components in the replication sample. Therefore, we considered the match between both principal components structures to be adequate. Analysis of the 59 SAS items revealed that there were no systematic differences in item means or distributions that may have produced spurious components in the PCA. Only one SAS item had skewness $> +1.0$, and means and standard deviations were very similar across items (item means ranged 0.96 to 2.79; SDs ranged 0.94 to 1.34). Subscales were next derived by summing the ratings for the items loading saliently on the three components of the combined samples.

Table 2 presents correlations among the SAS subscales for the total sample as well as women and men separately, with coefficient alphas reported in *italic* on the diagonal. We combined the third and fourth samples for this analysis.

As can be seen, Sociotropy did correlate with the Solitude subscale, especially for women. However, it did not correlate with the other autonomy dimension, Independence. Solitude and Independence had only a slight correlation. The three revised SAS subscales had adequate internal consistency, although the alpha coefficient for the Solitude subscale fell below 0.70 for the men. Correlations between the revised SAS subscales and Marlowe-Crowne Social Desirability total score (MCSD; Crowne & Marlowe, 1960) revealed minimal effects of social desirability, with SAS

*Listwise deletion for missing items resulted in a reduction in samples sizes.

†A principal factor analysis with oblique rotation was performed on the combined sample to determine the intercorrelations among the SAS factors. The factors obtained with the oblique rotation were identical to the varimax solution. SAS Sociotropy correlated -0.05 with Solitude and -0.11 with Independence, whereas SAS Solitude and Independence correlated -0.04 . These correlations indicate that the SAS factors are orthogonal dimensions thereby justifying the use of varimax rotation.

Table 1. Principal components loadings for the revised Sociotropy and Autonomy Scales

SAS Items	Sociotropy	Solitude	Independence
SAS45	<i>0.63</i>	0.15	-0.10
SAS49	<i>0.57</i>	0.19	-0.04
SAS25	<i>0.57</i>	-0.25	0.22
SAS53	<i>0.56</i>	-0.36	0.15
SAS04	<i>0.55</i>	0.05	-0.09
SAS02	<i>0.54</i>	0.23	-0.06
SAS44	<i>0.53</i>	0.26	-0.13
SAS57	<i>0.53</i>	-0.08	0.09
SAS46	<i>0.53</i>	0.04	-0.05
SAS55	<i>0.52</i>	0.13	-0.02
SAS52	<i>0.52</i>	0.11	0.05
SAS24	<i>0.51</i>	0.08	-0.02
SAS08	<i>0.51</i>	0.28	0.04
SAS23	<i>0.50</i>	0.21	-0.14
SAS31	<i>0.50</i>	0.04	0.00
SAS59	<i>0.49</i>	-0.32	0.02
SAS34	<i>0.46</i>	-0.08	0.14
SAS36	<i>0.44</i>	0.37	-0.13
SAS11	<i>0.42</i>	-0.27	0.20
SAS29	<i>0.41</i>	0.02	0.05
SAS32	<i>0.40</i>	0.24	-0.11
SAS01	<i>0.35</i>	0.03	-0.01
SAS54	0.29	-0.13	-0.02
SAS37	0.27	0.13	0.15
SAS13	0.27	0.22	0.13
SAS22	0.00	<i>0.53</i>	-0.06
SAS33	0.20	<i>0.52</i>	-0.06
SAS27	<i>0.37</i>	<i>0.52</i>	-0.21
SAS10	<i>0.35</i>	<i>0.48</i>	-0.33
SAS47	-0.09	<i>0.48</i>	0.06
SAS41	0.11	<i>0.47</i>	-0.02
SAS48	0.27	<i>0.43</i>	0.08
SAS19	0.27	<i>0.42</i>	-0.10
SAS09	0.18	<i>0.40</i>	0.06
SAS26	0.13	<i>0.39</i>	0.14
SAS20	-0.06	<i>0.36</i>	<i>0.31</i>
SAS06	-0.09	<i>0.35</i>	-0.04
SAS39	0.04	<i>0.35</i>	0.12
SAS12	-0.09	<i>0.31</i>	-0.10
SAS14	0.28	<i>0.30</i>	-0.15
SAS07	0.15	0.29	0.07
SAS16	-0.08	0.28	0.15
SAS17	-0.13	0.28	0.21
SAS43	-0.08	0.02	<i>0.57</i>
SAS50	-0.10	0.11	<i>0.55</i>
SAS28	0.01	-0.13	<i>0.55</i>
SAS38	0.06	-0.11	<i>0.53</i>
SAS30	-0.02	0.03	<i>0.53</i>
SAS56	-0.02	-0.01	<i>0.52</i>
SAS35	0.19	-0.15	<i>0.50</i>
SAS21	-0.05	0.23	<i>0.48</i>
SAS40	-0.01	0.15	<i>0.45</i>
SAS18	<i>0.37</i>	-0.29	<i>0.41</i>
SAS58	0.29	0.03	<i>0.40</i>
SAS42	0.03	0.01	<i>0.39</i>
SAS51	0.17	0.27	<i>0.37</i>
SAS15	-0.22	0.08	<i>0.36</i>
SAS05	0.25	0.00	<i>0.33</i>
SAS03	-0.12	-0.11	0.22

Note: $N = 476$; salient loadings >0.30 are in italic.

Sociotropy, Solitude and Independence correlating -0.02 , -0.13 , and 0.17 with the MCSD (based on sample 1; see Clark & Beck, 1991).*

Means and correlations for the revised SAS scales

Table 3 presents the means and standard deviations of the SAS, DEQ, MPS, BDI, IOS, SELSA, and PSI for the total sample as well as for men and women separately.

Ss scored within the normal range for nonclinical samples on all measures. Independent t tests based on the means and standard deviations shown in Table 3 revealed that women scored

*Copies of the revised SAS and scoring key are available from the first author.

Table 2. Correlations and alpha coefficients for revised SAS subscales

SAS Subscales	Sociotropy	Solitude	Independence
<i>Total sample (n = 944)</i>			
Sociotropy	<i>0.87</i>	0.25	0.06
Solitude	—	<i>0.70</i>	0.18
Independence	—	—	<i>0.76</i>
<i>Women (n = 578)</i>			
Sociotropy	<i>0.88</i>	0.35	0.09
Solitude	—	<i>0.69</i>	0.18
Independence	—	—	<i>0.75</i>
<i>Men (n = 360)</i>			
Sociotropy	<i>0.86</i>	0.22	0.04
Solitude	—	<i>0.66</i>	0.16
Independence	—	—	<i>0.78</i>

Note: Based on samples 3 and 4 together; alpha coefficients are in italics.

significantly higher than men on the Sociotropy subscale [$t(881) = 4.83, P < 0.001$], DEQ Dependency [$t(381) = 6.67, P < 0.001$] and Self-Efficacy [$t(381) = 2.13, P < 0.05$] scales, the IOS Emotional Support [$t(277) = 5.56, P < 0.001$] and Positive Stimulation [$t(273) = 2.06, P < 0.04$] subscales, PSI Sociotropy Scale [$t(263) = 3.80, P < 0.001$], and BDI Total Score [$t(881) = 3.93, P < 0.001$]. Men scored significantly higher than women on the Solitude subscale [$t(881) = 7.83, P < 0.001$], MPS Other-Oriented Perfectionism scale [$t(503) = 3.38, P < 0.001$], IOS Attention Scale [$t(271) = 3.33, P < 0.001$], the SELSA Family [$t(272) = 2.75, P < 0.01$], Romantic [$t(257) = 2.96, P < 0.01$] and Social [$t(280) = 2.41, P < 0.05$] subscales, and the PSI Autonomy Scale [$t(249) = 1.99, P < 0.05$].

Table 4 presents correlations between the three revised SAS subscales and the MPS, DEQ, IOS, SELSA, PSI and BDI for the total sample as well as men and women, separately. For the total sample, SAS Sociotropy correlated with DEQ Dependency and Self-Criticalness, the IOS subscales measuring affiliation motivation, PSI Sociotropy and, to a lesser extent, the BDI. SAS Solitude subscale correlated with MPS Socially Prescribed Perfectionism, DEQ Self-Criticalness, IOS Attention, loneliness as measured by the SELSA subscales, PSI Autonomy, and the BDI, to a less extent. Finally, SAS Independence was moderately correlated with DEQ Self-Efficacy but had only a slight association with MPS Self-Oriented Perfectionism and PSI Autonomy.

Table 3. Means and standard deviations for revised SAS, DEQ, MPS, BDI, IOS, SELSA, and PSI

Scales	Women		Men		Total sample	
	M	SD	M	SD	M	SD
<i>SAS Scales</i>						
Sociotropy	65.21	16.66	59.85	15.39	63.06	16.38
Solitude	19.48	6.25	23.00	6.30	20.84	6.50
Independence	41.17	7.88	42.16	8.57	41.53	8.20
<i>MPS Scales</i>						
Self-oriented perfect.	62.11	17.03	63.76	15.91	62.68	16.57
Other-oriented perfect.	53.87	10.98	57.26	10.94	55.12	11.13
Socially prescribed perfect.	52.21	13.43	52.26	10.73	52.11	12.55
<i>DEQ Scales</i>						
Dependency	-0.50	0.85	-1.09	0.81	-0.71	0.88
Self-criticism	-0.04	0.84	-0.09	0.76	-0.05	0.81
Self-efficacy	-0.77	1.16	-1.04	1.15	-0.86	1.16
<i>IOS Subscales</i>						
Emotional support	21.88	4.92	18.02	4.93	20.35	5.26
Attention	15.73	5.14	17.57	4.42	16.44	4.94
Positive stimulation	29.61	6.31	27.77	6.45	28.88	6.40
Social comparison	16.08	3.47	15.54	3.27	15.86	3.40
<i>SELSA Subscales</i>						
Romantic	40.22	20.08	45.40	19.91	42.22	20.12
Family	21.15	12.31	25.27	12.56	22.74	12.54
Social	30.94	12.52	35.84	13.93	32.87	13.27
<i>PSI Subscales</i>						
Sociotropy Total Score	98.36	14.49	90.32	15.27	95.12	15.30
Autonomy Total Score	84.27	13.53	87.24	12.77	85.42	13.27
BDI Total Score	9.07	7.42	7.29	6.34	8.35	7.06

Note: SAS = Sociotropy-Autonomy Scale, MPS = Multidimensional Perfectionism Scale, DEQ = Depressive Experiences Questionnaire, IOS = Interpersonal Orientation Scale, SELSA = Social and Emotional Loneliness Scale, PSI = Personal Style Inventory, BDI = Beck Depression Inventory. SAS subscales and BDI total score based on samples 3 and 4 combined; MPS and DEQ based on sample 3; IOS and SELSA subscales based on sample 4.

Table 4. Correlations between revised SAS subscales and other measures

Measures	Women			Men			Total sample		
	Soc	Sol	Ind	Soc	Sol	Ind	Soc	Sol	Ind
<i>MPS Subscales</i>									
Self-oriented	0.08	-0.01	0.28	0.03	0.14	0.19	0.07	0.03	0.24
Other-oriented	0.07	0.13	0.23	-0.03	0.01	0.08	0.01	0.12	0.17
Socially prescribed	0.12	0.32	0.14	0.24	0.44	0.10	0.15	0.34	0.12
<i>DEQ Subscales</i>									
Dependency	0.22	-0.04	-0.06	0.45	0.15	-0.13	0.32	-0.05	-0.08
Self-criticism	0.19	0.41	0.09	0.38	0.39	0.29	0.24	0.39	0.15
Self-Efficacy	0.05	-0.04	0.45	0.24	0.10	0.49	0.12	-0.01	0.45
<i>IOS Subscales</i>									
Emotional support	0.21	-0.14	0.03	0.33	-0.15	-0.12	0.29	-0.26	-0.09
Attention	0.42	0.29	-0.03	0.40	0.24	-0.15	0.37	0.32	-0.05
Pos stimulation	0.33	0.07	0.21	0.38	-0.19	-0.04	0.36	-0.09	-0.08
Soc comparison	0.47	0.17	0.05	0.49	-0.09	-0.16	0.48	0.10	-0.05
<i>SELSA Subscales</i>									
Romantic	0.13	0.13	-0.15	0.28	0.25	-0.07	0.17	0.21	-0.09
Family	0.06	0.29	0.02	0.13	0.18	-0.13	0.07	0.28	-0.02
Social	0.12	0.40	-0.16	0.07	0.27	-0.20	0.07	0.37	-0.14
<i>PSI Subscales</i>									
Sociotropy	0.76	0.24	-0.23	0.73	0.00	-0.22	0.76	0.04	-0.26
Autonomy	0.39	0.52	0.12	0.14	0.42	0.29	0.27	0.48	0.20
<i>BDI Total Score</i>	0.20	0.31	0.00	0.34	0.29	0.03	0.26	0.26	0.00

Note: SAS = Sociotropy-Autonomy Scale, MPS = Multidimensional Perfectionism Scale, DEQ = Depressive Experiences Questionnaire, IOS = Interpersonal Orientation Scale, SELSA = Social and Emotional Loneliness Scale, PSI = Personal Style Inventory, BDI = Beck Depression Inventory. SAS subscales and BDI total score based on samples 3 and 4 combined; MPS and DEQ based on sample 3; IOS and SELSA subscales based on sample 4. Significance: women— $r > |.16|$, $P < 0.05$; men— $r > |.20|$, $P < 0.05$; total sample $r > |.12|$, $P < 0.05$.

There were some differences in the correlations between men and women. SAS Sociotropy was not as well discriminated in men as in women. Amongst men, SAS Sociotropy correlated with Socially-Prescribed Perfectionism as well as DEQ Self-Criticalness and Self-Efficacy, whereas SAS Sociotropy showed very little association with perfectionism or self-criticalness in women. SAS Solitude had a similar pattern of correlations in both sexes, with the exception that Solitude was associated with romantic loneliness in men but family loneliness in women. Finally, SAS Independence did correlate with the PSI Autonomy Scale in men but not in women. These differences suggest that sociotropy may be a less clearly defined vulnerability construct for men than women, given the tendency for SAS Sociotropy to show a broader range of correlations in the male sample. On the other hand, SAS Independence may be more relevant to the autonomy construct for men than women given the higher correlation with PSI Autonomy in the male sample.

DISCUSSION

By using a series of principal components and factor analyses with successive samples of undergraduate students, we identified a set of 59 items that reliably reflected three personality constructs, Sociotropy, Solitude, and Independence. The present autonomy dimensions of Solitude and Independence emerged consistently across samples, and the internal consistency estimates for the two subscales constructed to measure these dimensions were higher than those reported for the autonomy subscales of Freedom from Control ($\alpha = 0.56$) and Preference for Solitude ($\alpha = 0.63$) that were calculated by Robins (1985) for the original 60-item SAS.

In their factor analysis of the original SAS, Beck *et al.* (1983) reported three factors for sociotropy and three for autonomy. In our analyses we found that the sociotropy items formed a single dimension and the autonomy items factored into two naturally occurring orthogonal dimensions. There are a number of reasons for the differences in the two analyses. First, Beck *et al.* (1983) performed separate factor analyses on the 30 sociotropy and 30 autonomy items. Because we performed our factor analyses on the total SAS item pool, one can expect different results. Second, the item pool on which the factor analyses were based are different in the two studies. Beck *et al.* (1983) performed their factor analyses on the original 60 items of the SAS, whereas we performed our analyses on the 93-item version of the instrument. Finally, different samples were used in the two studies, with Beck *et al.* (1983) utilising 378 psychiatric outpatients, whereas the present study is based on college students. Given these differences it is noteworthy the number of similarities between the present results and those of Beck *et al.* (1983).

Solitude, one of the autonomy dimensions of the revised SAS, displayed better construct validity than the older SAS Autonomy Total Score. Solitude had a higher correlation with the DEQ Self-Criticalness scale and a lower correlation with the DEQ Dependency Scale than the original SAS Autonomy Total Scale (Blaney & Kutcher, 1991). Furthermore, SAS Solitude had good convergent and discriminant validity with the PSI, having a strong correlation with the PSI Autonomy Scale but minimal association with PSI Sociotropy. When PSI Autonomy was broken down into its three subscales of Perfectionism/Self-Criticalness, Need for Control, and Defensive Separation (Robins *et al.*, 1993), SAS Solitude had higher correlations with Need for Control and Defensive Separation From Others than with the four item Perfectionism/Self-Criticalness subscale. In an earlier study Blaney and Kutcher (1991) found that the SAS Autonomy Total Scale was not well differentiated from interpersonal concerns, having negative correlations with DEQ Dependency and the Anaclitic subscale of the Dysfunctional Attitudes Scale. From this they concluded that the scale may be "a better inverse measure of dependent/anaclitic tendencies than it is a direct measure of self-critical/introjective tendencies" (p. 509).

Support for solitude as a specific component of Beck's (1983) autonomous personality construct can be seen in the pattern of correlations with the interpersonal scales. Many of the SAS items having the highest loading on the Solitude factor dealt with insensitivity and distance from the needs and concerns of others. The revised SAS Solitude subscale correlated with Socially Prescribed Perfectionism, which Hewitt and Flett (1991a) described as "the belief that others have perfectionistic expectations and motives for oneself" (p. 98). It also had a positive correlation with IOS Attention and the SELSA subscales as well as a slight negative association with IOS Emotional Support. Together these findings suggest that high solitary individuals tend to be lonely and somewhat ambivalent about social contact with others. The stronger correlations with the SELSA Social subscale suggests that this loneliness primarily reflects the absence of social relationships. High solitary individuals may avoid social contact because they feel other people hold unrealistic expectations for them (i.e., MPS Socially Prescribed Perfectionism). They may also be interested in interpersonal contact, but only if they receive adequate attention from others (i.e., IOS Attention). Thus individuals with high SAS solitude feel cut-off and distant from others, thereby strengthening the link between solitude and dysphoria.

The other dimension of autonomy assessed by the revised SAS, Independence, did not have the characteristics of a personality vulnerability factor. Most of the SAS items loading on this dimension dealt with individualism, assertiveness, and independence from others. Only one or two items assessed mastery or achievement orientation. Thus it is not surprising that SAS Independence did not correlate with other measures of personality vulnerability. The scale did correlate with DEQ Self-Efficacy and, to a lesser extent, Self-Oriented Perfectionism and PSI Autonomy. Given the positive orientation of SAS Independence, it is not surprising that its highest correlation was with DEQ Self-Efficacy. Blatt *et al.* (1976) described Self-Efficacy as the positive aspect of "goal-directed strivings and feelings of accomplishment" (p. 385). The slight correlation with PSI Autonomy was due to the Defensive Separation feature of the scale, whereas the inverse association with PSI Sociotropy was due to a negative correlation with the Concern About What Others Think subscale of PSI Sociotropy. Together these findings suggest that a person scoring high on SAS Independence tends to be individualistic, and have little desire for the approval or acceptance of others. They tend to set high standards for themselves and feel a sense of accomplishment in their goal-directed strivings. With these characteristics it is highly unlikely that SAS Independence is a vulnerability factor for negative affect. Instead it may constitute an *invulnerability* factor or buffer against negative emotional states.

The Sociotropy scale of the revised SAS was very similar in item composition to the Sociotropy Total Score of the original SAS. Like the original scale, the revised SAS Sociotropy had strong convergent and discriminant validity in the present study (Clark & Beck, 1991; Clark *et al.*, 1992). It correlated in the expected direction with affiliation motivation as measured by the IOS, the DEQ Dependency Scale, and the PSI Sociotropy Scale. It also had a weak relationship with DEQ Self-Criticalness and PSI Autonomy. The latter association was caused primarily by the Perfectionism/Self-Criticalness dimension of PSI Autonomy. In fact, the apparent overlap between the Sociotropy and Autonomy Scales may be due, in part, to the generality of self-criticalness. In other studies DEQ Self-Criticalness was associated with both achievement and interpersonal concerns

(Barnett & Gotlib, 1988; Blaney & Kutcher, 1991; Robins, 1985; Robins *et al.*, 1993). In the present study the revised PSI Sociotropy and Autonomy scales correlated 0.25, but this was due almost entirely to a high correlation between PSI Sociotropy and the Perfectionism/Self-Criticalness subscale ($r = 0.50$). (PSI Sociotropy only correlated 0.28 with Need for Control and 0.01 with Defensive Separation, the other two subscales of PSI Autonomy.) In addition, partial correlations revealed that the slight correlation between SAS Sociotropy and Solitude declined to 0.18 when DEQ Self-Criticalness was partialled out of the relationship. Thus the revised SAS Sociotropy had good convergent and discriminant validity when taking into account the influence of self-criticalness as an overlapping construct appreciable to both interpersonal and achievement concerns.

The present results indicate that researchers using the SAS as a measure of personality vulnerability in depression should focus on the specific constructs of solitude and independence rather than on the more global construct of autonomy. Furthermore, the 59-item revised SAS appears to be an improvement over previous versions of this instrument by separating out features of the autonomous personality that may represent a vulnerability factor in negative affect (i.e., solitude) from other features that may function as a protection against negative emotional states (i.e., independence). Recently, Rude and Burnham (1993) concluded that achievement vulnerability is a more heterogeneous construct than interpersonal vulnerability, with different autonomous scales measuring somewhat unrelated aspects of the construct. Therefore we are not alone in suggesting that more refined and specific measures of personality vulnerability may be needed before we are to begin to understand the role of pre-existing personality factors in depression (Robins *et al.*, 1993).

The current study presented initial data on the revision of one self-report personality vulnerability measure, the Sociotropy-Autonomy Scale. There are a number of directions for future research with the SAS. First, self-report measures of cognitive constructs have a number of shortcomings, and so research is needed that examines the convergence between the SAS and behavioural and experimental indices of depression-related cognitive constructs (Segal & Swallow, 1994). Second, the study relied on first year university students, and so limits the generalizability of our findings to the general population. Although it is important to develop vulnerability measures on nonclinical samples so that one does not confound personality with clinical state, our research should be replicated on clinical samples. Nonclinical community samples, though rarely used in personality vulnerability research, would be ideal to test the generalizability of our findings to the general population. However, while acknowledging the need for replication with clinical samples, it is also important to recognise that research into personality factors that may predispose individuals to nonclinical negative emotional states is of theoretical and empirical interest in its own right. Finally, future studies are needed with different clinical and nonclinical samples to determine the temporal stability of the SAS dimensions across time, situations, and clinical state. Until then, the current results suggest that the revised SAS may be a useful self-report instrument for assessing interpersonal and, possibly, achievement vulnerability to negative emotional states.

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