



# Finding pleasure in solitary activities: desire for aloneness or disinterest in social contact?

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## Abstract

People balance their interpersonal engagements with time spent alone but differ widely in the degree to which they engage in and enjoy solitary activities. This study examined the question of whether these differences are primarily a function of a strong desire to spend time alone (high solitropism) versus a weak desire to spend time with other people (low sociotropism). Two-hundred and four respondents completed multiple measures of solitropic and sociotropic orientations, and answered questions about their participation in and enjoyment of solitary activities. The results suggested that the frequency and enjoyment of solitary activities are more strongly related to a high desire for solitude than to low sociotropism.

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## 1. Introduction

*Homo sapiens* is a highly gregarious species, presumably because human beings obtain many benefits from affiliating and living with others (Baumeister & Leary, 1995; Hill, 1987). Even so, most people, even those who are highly sociable, spend much of their time by themselves, either by choice or life circumstance (Larson, 1990). Although being alone is sometimes associated with feelings of loneliness and alienation (Larson & Csikszentmihalyi, 1980), research suggests that, overall, spending occasional time away from other people predicts life satisfaction and psychological well-being (Bates, 1964; Burke, 1991). Indeed, some have suggested that the ability to enjoy solitary activities is associated with mental health (Burke, 1991; Maslow, 1970).

People differ, of course, in the degree to which they enjoy solitary activities. Some individuals seek and enjoy frequent opportunities to spend time by themselves, whereas other people dislike,

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dread, and avoid occasions in which they are alone or must do things by themselves. Our interest in this study was in the degree to which these differences in people's participation in and enjoyment of solitary activities are mediated by the competing preferences for being with other people versus being alone. Specifically, people might gravitate toward solitary activities either because they are positively disposed to be alone or because they have little desire to interact with others (or even find social interactions aversive). Does the enjoyment of solitary activities reflect primarily a high motivation to be alone or a low motivation to affiliate with other people?

We will use the terms *sociotropic* orientation and *solitropic* orientation to refer to the preferences for spending one's time in interpersonal interaction versus solitude, respectively. A high *sociotropic* orientation is reflected in a desire for social contact and social interaction; a low *sociotropic* orientation reflects a low desire to affiliate with others but not necessarily an avoidance of social interaction. Several previously-studied dispositional variables tap into the general tendency to affiliate with other people. Most obviously, affiliation motivation (or need for affiliation) reflects a *sociotropic* orientation (Hill, 1987; Jackson, 1967; Munir & Jackson, 1997). Hill (1987) noted that people may desire to affiliate with others for at least four discrete reasons—to receive social attention, to obtain emotional support, because they find other people stimulating, and for social comparison—but in all cases the individual is motivated to seek contact with other people. Similarly, sociability—the “tendency to affiliate with others and to prefer being with others to remaining alone” (Cheek & Buss, 1981, p. 330)—also reflects a *sociotropic* orientation, as does extraversion, of which sociability is typically regarded as a component (Costa & McCrae, 1992; Eysenck, 1990). People who are high in the need for belongingness and social acceptance should likewise desire to interact with others rather than be by themselves because belongingness needs cannot be met in isolation from other people (Baumeister & Leary, 1995; Leary, Kelly, Cottrell, & Schreindorfer, submitted for publication).

In contrast, *solitropic* dispositions steer people toward solitary activities and away from contact with others. Highly *solitropic* individuals seek solitude at every turn and often feel that they do not get enough time by themselves. People who are low in *solitropism*, on the other hand, have no particular need to be away from other people or to spend time alone. *Solitropism* is reflected, for example, in a high need for privacy, the desire to control how much access other people have to the individual and how well they know him or her (Derlega & Chaiken, 1977; Pedersen, 1979). Some people do not want others to get to know them too well and, thus, often want to be away from other people (Berscheid, 1977; Pedersen, 1979). Some individuals also appear to enjoy the feeling of being anonymous, for example as they walk the streets of a large city by themselves (Pedersen, 1979). Furthermore, people sometimes enjoy and seek out the experience of true isolation, separating themselves physically from other people, for example by walking alone in the forest or retiring to the solitude of their room or apartment. Each of these tendencies appears to reflect primarily a positive movement toward solitude, either temporarily or as a way of life.

People might enjoy and seek opportunities for solitary activities either because they are low in *sociotropic* orientation or are highly *solitropic*. For example, a person scoring low in extraversion, sociability, or affiliation motivation may simply be unmotivated to seek out frequent company (Burger, 1995), whereas a person high in a need for privacy or anonymity may be drawn to the experience of being alone (Pederson, 1988). Our interest in the present study was in whether the frequency and enjoyment of solitary activities is primarily a function of low *sociotropic* tendencies or high *solitropic* tendencies.

## 2. Method

### 2.1. Participants

Participants were 100 male and 104 female undergraduate students who participated in partial fulfillment of a course research requirement.

### 2.2. Materials

Participants completed a questionnaire that consisted of 17 multi-item measures that assessed sociotopic orientation (eight measures), solitropic orientation (six measures), and participants' frequency, likelihood, and enjoyment of solitude (one measure each).

#### 2.2.1. Interpersonal Orientation Scale

Hill's (1987) Interpersonal Orientation Scale (IOS) was used to measure affiliation motivation. The IOS consists of four subscales that assess the motivation to affiliate with other people for emotional support (six items; e.g. "If I feel unhappy or kind of depressed, I usually try to be around other people to make me feel better"), social comparison (five items; e.g. "I find that I often look to certain other people to see how I compare to others"), social attention (six items; e.g. "I often have a strong need to be around people who are impressed with what I am like and what I do"), and positive stimulation (nine items; e.g. "Just being around others, listening to them, and relating to them on a one-to-one level is one of my favorite and most satisfying pastimes"). Cronbach's alpha exceeds 0.71 for all four subscales (Hill, 1987).

#### 2.2.2. Extraversion

Extraversion was measured using the 12-item extraversion scale from the NEO-PI (Costa & McCrae, 1992). Sample items include "I really enjoy talking to people" and "I am a cheerful, high-spirited person." Cronbach's alpha coefficient is 0.88.

#### 2.2.3. Sociability

The Cheek and Buss (1981) Sociability Scale was used to assess sociability. Sample items include "I like to be with people" and "I'd be unhappy if I were prevented from making many social contacts." Cheek and Buss reported a Cronbach's alpha coefficient of 0.70.

#### 2.2.4. Need to belong

The Need to Belong Scale consists of 13 items that assess a desire for acceptance, inclusion, and belongingness (Leary, 1997; for a revised version, see Leary et al., submitted for publication). Sample items include "I want other people to accept me" and "I cannot imagine a worse fate than being rejected by those you love." Interitem reliability exceeds 0.80.

#### 2.2.5. Desire for social contact

An ad hoc measure of the degree to which people desire social contact was created that consisted of the following five items: "I like to have a lot of people around me," "I do not like being alone" (reverse-scored), "I try to spend most of my free time with other people," "I feel more

comfortable surrounded by other people rather than being alone,” “I am a person who does not like being by myself.”

#### 2.2.6. *Preference for solitude*

Items drawn from Pedersen’s (1979) factor analytic study of privacy were used to create scales that assessed a general, prevailing preference to be alone. Sample items on the preference for solitude scale included “I usually prefer doing things alone” and “I am never happier than when alone.”<sup>1</sup>

#### 2.2.7. *Desire for peaceful aloneness*

These five ad hoc items assessed the enjoyment of the peacefulness of being by oneself (e.g. “I like to be at home with nobody else around”).

#### 2.2.8. *Desire for occasional solitude*

Desire for occasional solitude was assessed by five ad hoc items such as “Sometimes I need to be alone and away from anyone.” The content of these items stressed the occasional nature of the desire for aloneness.

#### 2.2.9. *Desire for isolation*

The five items that loaded highest on the isolation factor in Pedersen’s (1979) factor analysis were used to assess a desire to be far away from other people. Sample items included “I would like to work in a fire watch tower by myself all summer” and “I would be happy living all alone in a cabin in the woods.”

#### 2.2.10. *Desire for anonymity*

Desire for anonymity (the desire not to be noticed or recognized by other people who may be present) was measured by the five items that loaded on Pedersen’s (1979) anonymity factor.

#### 2.2.11. *Interpersonal reserve*

Five items from Pedersen’s (1979) study were used to assess interpersonal reserve—the degree to which a person withholds personal aspects of him- or herself from other people. Items included “My personal relations with people are cool and distant” and “I would be reluctant to engage in a prolonged conversation with someone I had just met.”

#### 2.2.12. *Frequency of solitary activities*

Participants were asked to indicate how many times in the last month they had engaged in each of 12 activities that are common among university students: eaten in a restaurant, gone shopping at a grocery store or mall, gone to a movie, eaten at the university cafeteria, gone to the campus post office, exercised, eaten in the student union, watched television, attended church, gone to a party, taken a walk, and driven a car more than 30 miles on a single trip. After doing so, they were asked to indicate the number of times in the last month they did each of the 12 activities *by*

<sup>1</sup> This study was conducted prior to the publication of Burger’s (1995) Preference for Solitude Scale. Had this scale been published at the time our data were collected, we would have undoubtedly included it among our measures.

themselves. The sum of their answers to these two questions served as measures of the total frequency of activities and frequency of solitary activities, respectively.

#### 2.2.13. *Likelihood of solitary activities*

Participants were then given the list of 12 activities a third time and asked “if you wanted to do each thing listed but couldn’t find anyone else to do it with you, how likely would you be to do the activity alone?” Participants answered on a 6-point scale, where 1 = not at all likely to do this alone, 2 = very unlikely, 3 = moderately unlikely, 4 = moderately likely, 5 = very likely, and 6 = certain to do this alone. The sum of these 12 ratings constituted a measure of the likelihood of engaging in solitary activities when no one else is available as a companion.

#### 2.2.14. *Enjoyment of solitary activities*

Finally, participants rated how much they would enjoy themselves if they did each of the 12 activities alone. Ratings were made on a 5-point scale, where 1 = I would greatly dislike doing this alone, 2 = I would somewhat dislike doing this alone, 3 = I would feel neutral about doing this alone, 4 = I would somewhat enjoy doing this alone, and 5 = I would greatly enjoy doing this alone.

### 2.3. *Procedure*

Participants completed the questionnaires in a random order in groups of 12–20. They were assured that their answers would be completely anonymous and confidential.

## 3. Results

Correlations between the sociotropic and solitropic predictor variables and the three measures of solitude are shown in Table 1, along with the interitem reliabilities of each measure (Cronbach’s alpha coefficient). Hierarchical multiple regression analyses were conducted to test the independent effects of the sociotropic and solitropic variables on the frequency, likelihood, and enjoyment of solitary activities. Because the sociotropic and solitropic variables were negatively correlated (the canonical correlation between the sets of sociotropic and solitropic variables was  $-0.38$ ), it was necessary to examine the effects of each set while partialing out the other.

### 3.1. *Frequency of solitary activities*

The total number of times that participants reported performing the 12 activities was entered in the first step of a hierarchical regression analysis to predict the number of times they engaged in the behaviors alone (to control for total frequency of these activities). Not surprisingly, the total number of times that participants engaged in the behaviors predicted the number of times that they engaged in the behaviors by themselves,  $R^2 = 0.18$ ,  $P < 0.001$ .

#### 3.1.1. *Effects of sociotropism*

When entered on Step 2 of the regression analysis, the six solitropic measures predicted 8.0% of the variance in solitary activities,  $P < 0.01$  (see Table 2). In Step 3, the set of sociotropic measures

Table 1

Correlations between sociotropic and solitropic variables and the reported frequency, likelihood, and enjoyment of solitary activities

Predictor	Mean	S.D.	$\alpha$	Frequency <sup>a</sup>	Likelihood	Enjoyment
<i>Sociotropic variables</i>						
Affiliation motivation—emotional support	20.7	4.24	0.79	−0.09 (−0.11)	−0.06	−0.16*
Affiliation motivation—positive stimulation <sup>b</sup>	31.3	5.92	0.81	0.04 (0.17*)	0.10	−0.04
Affiliation motivation—social comparison	16.5	3.34	0.73	−0.05 (−0.05)	−0.08	−0.08
Affiliation motivation—social attention	18.0	4.59	0.81	0.09 (0.07)	0.00	−0.04
Sociability	18.8	3.74	0.77	−0.06 (−0.04)	−0.13*	0.22**
Extraversion	43.8	6.56	0.80	−0.12* (−0.11)	0.00	−0.05
Need to belong	45.5	7.65	0.82	0.01 (0.03)	−0.07	−0.24*
Desire for social contact	14.5	3.76	0.80	−0.11* (−0.09)	−0.23**	−0.39**
<i>Solitropic variables</i>						
Desire for occasional solitude	18.9	4.06	0.85	0.08 (0.11)	0.36**	0.39**
Preference for solitude	10.8	3.43	0.77	0.19** (0.22)	0.24**	0.35**
Desire for peaceful aloneness	16.7	4.00	0.78	0.05 (−0.09)	0.33**	0.36**
Reserve	10.0	3.69	0.78	0.07 (−0.03)	0.00	0.12*
Isolation	9.9	3.39	0.68	0.10 (−0.10)	0.20*	0.28**
Desire for anonymity	10.6	2.17	0.45	0.06 (0.02)	0.24**	0.21*

<sup>a</sup> Numbers in parentheses are semi-partial correlations with the total frequency of activities removed.

<sup>b</sup> Positive stimulation was designated a priori as a sociotropic variable, but it behaved more like a solitropic variable.

\*  $P < 0.05$ .

\*\*  $P < 0.01$ .

then accounted for an additional 5.5% of the variance, which did not quite reach a conventional level of significance,  $P < 0.07$ . Thus, sociotropism appeared to be weakly related to the frequency of solitary activities after the variance due to the solitropic variables was removed.

When the sociotropic variables were permitted to enter the equation separately rather than as a set on Step 3, the IOS Positive Stimulation subscale (Hill, 1987) was the only sociotropic measure to add uniquely to the prediction of solitary activities,  $\Delta R^2 = 0.02$ ,  $P < 0.02$ . Interestingly, however, its semi-partial correlation was positive rather than negative, indicating that finding other people positively stimulating was associated with a higher rather than lower number of solitary activities. We return to this point later.

### 3.1.2. Effects of solitropism

When the analysis was conducted in the other direction (i.e., to test the unique contribution of the solitropic variables), the sociotropic variables accounted for 9.2% of the variance on Step 2, and the solitropic variables accounted for an additional 4.3% of the unique variance in the frequency of solitary activities, which was marginally significant,  $P < 0.08$  (see Table 2). When the solitropic variables were allowed to enter the equation singly after the sociotropic set was partialled out, only preference for solitude made a significant unique contribution,  $\Delta R^2 = 0.02$ ,  $P < 0.04$ .

Taken together, the sociotropic and solitropic variables accounted for 13.5% of the variance in solitary activities. (With the total number of activities included, 31.5% of the variance is accounted for.) However, the overlap between the two sociotropic and solitropic sets was such

Table 2  
Hierarchical regression analyses examining the unique effects of sociotropism and solitropism

	$R^2$	$F$ -change	$P <$
<i>Frequency of solitary activities</i>			
<i>Unique effects of sociotropism</i>			
Step 1 Total frequency	18.0	43.32	0.001
Step 2 Solitropic variables	8.0	3.52	0.01
Step 3 Sociotropic variables	5.5	1.86	0.07
<i>Unique effects of solitropism</i>			
Step 1 Total frequency	18.0	43.32	0.001
Step 2 Sociotropic variables	9.2	3.05	0.01
Step 3 Solitropic variables	4.3	1.94	0.08
<i>Likelihood of solitary activities</i>			
<i>Unique effects of sociotropism</i>			
Step 1 Solitropic variables	16.0	6.21	0.001
Step 2 Sociotropic variables	5.0	1.38	0.21
<i>Unique effects of solitropism</i>			
Step 1 Sociotropic variables	12.0	3.26	0.001
Step 2 Solitropic variables	8.8	3.46	0.01
<i>Enjoyment of solitary activities</i>			
<i>Unique effects of sociotropism</i>			
Step 1 Solitropic variables	21.5	8.78	0.001
Step 2 Sociotropic variables	6.2	1.96	0.053
<i>Unique effects of solitropism</i>			
Step 1 Sociotropic variables	18.9	5.54	0.001
Step 2 Solitropic variables	8.8	3.72	0.002

that neither accounted for a significant portion of the variance at the 0.05 level of significance (although both approached significance).

### 3.2. Likelihood of solitary activities

Participants' estimates of the likelihood that they would engage in the solitary activities if they wanted to do them but had no one to go with them were summed and analyzed in two hierarchical regression analyses as shown in the middle panel of Table 2.

#### 3.2.1. Effects of sociotropism

When the solitropic variables were entered on Step 1 of the analysis, they accounted for 16% of the variance in the likelihood of engaging in solitary activities,  $P < 0.001$ . When the sociotropic variables were entered on Step 2, they did not account for a significant portion of the unique variance in the likelihood estimates,  $\Delta R^2 = 0.05$ ,  $P > 0.20$ . When the sociotropic predictors were allowed to enter the equation in stepwise fashion, the IOS Positive Stimulation subscale was

again the only significant predictor,  $\Delta R^2 = 0.02$ ,  $P < 0.02$ . As on the analysis of solitary activities, its semi-partial correlation was again positive rather than negative as expected,  $sr = 0.15$ .

### 3.2.2. *Effects of solitropism*

Conducting the analysis by entering the sociotropic variables in Step 1 revealed an  $R^2$  of 0.12,  $P < 0.001$ . The solitropic variables then explained an additional 8.8% of the variance in Step 2,  $P < 0.01$ . The only solitropic variable to make a unique contribution by itself was desire for occasional solitude,  $\Delta R^2 = 0.07$ ,  $P < 0.001$ .

## 3.3. *Enjoyment of solitary activities*

### 3.3.1. *Effects of sociotropism*

The solitropic variables accounted for 21.5% of the variance in reported enjoyment of solitary activities on Step 1,  $P < 0.001$ , and the sociotropic variables accounted for an additional 6.2% of the variance on Step 2,  $P < 0.06$  (see bottom panel of Table 2). Two of the sociotropic variables made unique contributions to the prediction of enjoyment: extraversion,  $\Delta R^2 = 0.02$ ,  $P < 0.01$ , and desire for social contact,  $\Delta R^2 = 0.03$ ,  $P < 0.01$ .

### 3.3.2. *Effects of solitropism*

In the second analysis, sociotropic variables accounted for 18.9% of the variance on Step 1, and the solitropic variables accounted for 8.8% of the residual variance on Step 2,  $P < 0.001$ . Two solitropic predictors—desire for occasional solitude,  $\Delta R^2 = 0.05$ ,  $P < 0.001$ , and preference for solitude,  $\Delta R^2 = 0.02$ ,  $P < 0.04$ —made significant contributions by themselves.<sup>2</sup>

## 4. Discussion

Overall, both solitropic and sociotropic dispositions predicted unique variance in the frequency and enjoyment of solitary activities. At first glance, the pattern of results suggests that an interest in solitary activities is related both to the positive draw of aloneness and to a weak motivation to spend time with other people, although the solitropic effects may be stronger.

However, a closer examination of the data suggests that the inclination to engage in and enjoy solitary activities is more a function of the solitropic pull of aloneness rather than to low sociotropic tendencies. The only variable that was designated a priori as a sociotropic variable that made a unique contribution to either the frequency or expected likelihood of solitary activities after solitropism was partialled out was the positive stimulation subscale of the IOS (Hill, 1987). Although this measure ostensibly assesses the degree to which respondents affiliate with other people because they find them stimulating or interesting, the subscale showed an unexpected positive semi-partial correlation with both the frequency and likelihood measures, suggesting that

<sup>2</sup> Each analysis was reconducted using only the predictor variables that had significant zero-order correlations with each outcome variable (as shown in Table 1). For all three variables, the patterns of results were identical to those obtained when all predictors were used (although the actual amount of variance accounted for was slightly lower, as one would expect).

participants who reported receiving greater positive stimulation from others were more, rather than less, likely to engage in solitary activities.

To explore this unexpected finding, we correlated the individual items on the IOS positive stimulation subscale with the number of activities that participants reported doing alone. Only two of the items correlated significantly: “One of the most enjoyable things I can think of that I like to do is just watching people and seeing what they are like” and “I think I get satisfaction out of contact with others more than most people realize.” Clearly, the first of these items connotes not a sociotropic tendency to seek social interaction with other people but rather a solitropic disposition to watch other people from afar without actually interacting with them. The second item also has little to do with sociotropism per se but rather reflects the perception that other people view the individual as less sociable than he or she is; a person who responded in this fashion may, in fact, be quite unsociable. Further inspection of the nine items on the positive stimulation subscale of the IOS (Hill, 1987) reveals that they reflect at least three different interpersonal themes: enjoyment of watching people from afar (e.g. “One of the most enjoyable things I can think of that I like to do is just watching people and seeing what they are like”), a desire for close relationships (e.g. “I would find it very satisfying if I could have very close friendships with quite a few people”), and the belief that other people underestimate one’s sociability (e.g. “I think I get more satisfaction out of contact with others more than most people realize”). Although all items loaded on the same factor in Hill’s (1987) factor analysis of the IOS and Cronbach’s alpha coefficient was satisfactory in our study ( $\alpha = 0.81$ ), both our data and the item content suggest that the positive stimulation subscale may be multidimensional. In any case, the subscale does not appear to assess a sociotropic aspect of affiliation motivation as we expected.

If we disregard the sociotropic effects obtained on the frequency and likelihood measures because they were pulled primarily by solitropic items on the positive stimulation IOS subscale, the only bona fide sociotropic effect is the marginally significant effect obtained on ratings of the enjoyment of solitary activities. Not surprisingly, participants who scored high in extraversion and desire for social contact reported enjoying solitary activities less than those who scored low on these measures, or to look at it the other way, introverts and those who do not desire social contact expressed a greater enjoyment of solitude. Overall, however, the three outcome measures were more consistently and strongly related to solitropic than sociotropic variables, and this pattern was obtained despite the fact that we used more sociotropic than solitropic scales.

What, then, is the positive draw of solitude for individuals who are high in solitropism? Several theorists have suggested that solitude allows time for self-reflection and contemplation of personal problems and decisions (Altman, 1975; Bates, 1964). [For this reason, Larson (1990) suggested that solitude first becomes important developmentally in adolescence.] If so, we might expect solitropism to correlate with the tendency to think about oneself, as reflected in constructs such as private self-consciousness (Fenigstein, Scheier, & Buss, 1975) and need for cognition (Cacioppo & Petty, 1982). Furthermore, many instances of creativity, scientific breakthrough, and spiritual insight occur when people are alone (Storr, 1988; Suedfeld, 1982). Thus, individuals who are seeking these outcomes might be inclined to spend more time by themselves.

Solitude can also serve as an escape or respite from excessive social contact and responsibility. Perhaps people who enjoy solitude have a lower threshold for overstimulation than most other people, leading them to separate themselves as a means of lowering their levels of arousal and stress. This possibility is buttressed by research showing that introversion is associated with a low

tolerance for environmental stimulation and a preference for lower levels of sensory input (Geen, 1997). Clearly, then, solitude has many appealing features for some individuals, and future research should explore specific factors that lead certain people to seek and enjoy solitude.

In conclusion, without dismissing the possibility that low sociotropism may sometimes lead to solitary behaviors, the present data suggest that the frequency with which people engage in solitary activities and the degree to which they enjoy themselves when they are alone are more closely tied to a strong orientation toward solitude than to a weak desire for social interaction.

## References

- Altman, I. (1975). *The environment and social behavior*. Monterrey, CA: Brooks/Cole.
- Bates, A. P. (1964). Privacy—a useful concept? *Social Forces*, 42, 429–434.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117, 497–529.
- Berscheid, E. (1977). Privacy: a hidden variable in experimental social psychology?. *Journal of Social Issues*, 33, 85–101.
- Burger, J. M. (1995). Individual differences in preference for solitude. *Journal of Research in Personality*, 29, 85–108.
- Burke, N. (1991). College psychotherapy and the development of a capacity for solitude. *Journal of College Student Psychotherapy*, 6, 59–86.
- Cacioppo, J. T., & Petty, R. E. (1982). The need for cognition. *Journal of Personality and Social Psychology*, 42, 116–131.
- Cheek, J. M., & Buss, A. H. (1981). Shyness and sociability. *Journal of Personality and Social Psychology*, 41, 330–339.
- Costa, P. T. Jr., & McCrae, R. R. (1992). *Revised NEO personality inventory: professional manual*. Odessa, FL: Psychological Assessment Resources.
- Derlega, V. J., & Chaiken, A. L. (1977). Privacy and self-disclosure in close relationships. *Journal of Social Issues*, 33, 102–113.
- Eysenck, H. J. (1990). Biological dimensions of personality. In L. Pervin (Ed.), *Handbook of personality theory and research* (pp. 244–276). New York: Guilford.
- Fenigstein, A., Scheier, M. F., & Buss, A. H. (1975). Public and private self-consciousness: assessment and theory. *Journal of Consulting and Clinical Psychology*, 43, 522–527.
- Geen, R. G. (1997). Psychophysiological approaches to personality. In R. Hogan, J. Johnson, & S. Briggs (Eds.), *Handbook of personality psychology* (pp. 387–414). San Diego: Academic Press.
- Hill, C. A. (1987). Affiliation Motivation: people who need people. . . but in different ways. *Journal of Personality and Social Psychology*, 52, 1008–1018.
- Jackson, D. N. (1967). *Personality research form manual*. Goshen, NY: Research Psychologist Press.
- Larson, R. W. (1990). The solitary side of life: an examination of the time people spend alone from childhood to old age. *Developmental Review*, 10, 155–183.
- Larson, R., & Csikszentmihalyi, M. (1980). The significance of solitude in adolescents' development. *Journal of Current Adolescent Medicine*, 2, 33–40.
- Leary, M. R. (1997, March). *People who need people: individual differences in the need to belong*. Paper presented at the meeting of the Southeastern Psychological Association, Atlanta.
- Leary, M. R., Kelly, K., Cottrell, C. A., & Schreindorfer, L. S. (submitted for publication). *Individual differences in the need to belong*. Wake Forest University, Winston-Salem, NC 27109.
- Maslow, A. H. (1970). *Motivation and personality* (2nd ed.). New York: Harper & Row.
- Munir, S. S., & Jackson, D. W. (1997). Social support, need for support, and anxiety among women graduate students. *Psychological Reports*, 80, 383–386.
- Pedersen, D. M. (1979). Dimensions of privacy. *Perceptual and Motor Skills*, 48, 1291–1297.
- Pedersen, D. M. (1988). Correlates of privacy regulation. *Perceptual and Motor Skills*, 66, 595–601.
- Storr, A. (1988). *Solitude: a return to the self*. New York: Free Press.
- Suedfeld, P. (1982). Aloneness as a healing experience. In L. A. Peplau, D. Loneliness: a sourcebook of current theory Perlman, therapy research (pp. 54–67). New York: Wiley.