Photographic Depictions of the Self: Gender and Age Differences in Social Connectedness[1]

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With primarily (88%) Caucasian participants, the autophotography method [R. C. Ziller (1990), Photographing the Self, *Newbury Park, California: Sage] was used to test for gender differences in social connectedness as hypothesized by a number of scholars [e.g., M. F. Belenky, B. M. Clinchy, N. R. Goldberger, and J. M. Tarule (1986),* Women's Ways of Knowing, *New York: Basic Books; N. Chodorow (1978),* The Reproduction of Mothering, *Berkeley: University of California Press; C. Gilligan (1982),* In a Different Voice, *Cambridge, Massachusetts: Harvard University Press; J. V. Jordan (1991), "The Relational Self: A New Perspective for Understanding Women's Development," in J. Strauss and G. R. Goethals (Eds.),* The Self: Interdisciplinary Approaches, *New York: Springer-Verlag; N. P. Lyons (1983), "Two Perspectives: On Self, Relationships, and Mortality,"* Harvard Educational Review, *Vol. 53, pp. 125–145]. Relative to men (N = 59), women (N = 142) included more pictures of self-with-others, people smiling, people touching, groups of people, and family in their autophotographic essays. Relative to women, men had more photos of the self-alone and more photos involving physical activity and motor vehicles. Age trends suggested (a) increasing connectedness among women but not among men, and (b) greater transcendence of temporal and material concerns for both genders. When taken together with past findings employing more verbal methods, the results provide compelling evidence that women define themselves in more socially connected terms whereas men's self-definitions emphasize the quality of separateness.*

In the last decade, a number of feminist scholars have proposed that tra-
ditional conceptualizations of the self are inapplicable to women, that no-
tions of autonomy and separation-individuation are inherently gender
biased (Belenky, Clinchy, Goldberger, & Tarule, 1986; Chodorow, 1978;
Gilligan, 1982; Jordan, 1991; Josselson, 1988; Lyons, 1983; Miller, 1984;
Surrey, 1985; see summary by Markus & Cross, 1990). Although these
authors' views differ in important ways, one commonality among their ar-
guments is that women tend to define themselves relatively more in terms
of their relationships (i.e., social connectedness), whereas men describe
themselves more in terms reflective of separateness. As noted by several
researchers (Aron, Aron, & Smollen, 1992; Markus & Cross, 1990), this
notion of a socially connected or relational self is reminiscent of William
James's (1890/1968) concept of the social self. However, the separateness–
connectedness notion can be traced more clearly to Bakan's (1966) duality
of agency and communion (cf. Gutmann's, 1965, views of ego strength;
Carlson, 1971). Bakan used the term *communion* to denote tendencies that
promote group welfare, solidarity, and cohesion. *Agency* denoted those ten-
dencies that involve self-enhancement, maintenance, and protection, often
leading to isolation or separation.

Although gender differences in empathy (Hoffman, 1977) and non-
verbal sensitivity (Hall, 1978) are relevant to the argument, the most di-
rect evidence for gender differences in social connectedness has come
from interviews examining responses to moral conflict and self-descriptions.
Drawing on Gilligan's (1982) work, Lyons's (1983) content analyses of
such interviews showed that men and boys ($N = 18$, ages 8–60+) were
very likely to define themselves in ways that suggested separateness,
where reciprocity, rules, and roles are important. Women and girls
($N = 18$, same age range) were very likely to describe themselves in
terms that suggested a "connected self" including response to others on
their own terms, caring, and interdependence. Similarly, Belenky *et al.*
(1986) conceptualized women's ways of learning and knowing in terms
of connectedness.

Studies on the spontaneous self-concept using "who are you?" inter-
views and questionnaires add support to the connectedness notion. McGuire
and McGuire (1982) interviewed 560 children (Grades 1–11), allowing them
5 minutes to respond to the query, "tell us about yourself." Girls were more
likely to include others in their self-concepts than were boys. Whereas 24%
of the girls' noun referents involved significant others, only 17% of the boys'
nouns did so. Although apparently small in magnitude, this difference was
quite reliable ($p < .001$). At the other extreme chronologically, McCrae and
Costa (1988) obtained written Twenty-Statements Test ("who are you")
responses from subjects in the Baltimore Longitudinal Study of Aging; they

reported significant point-biserial correlations between female gender and such interpersonal responses as "personal relationship" and "nuclear family role."

Based on their qualitative interviews of girls and women, Belenky *et al.* (1986) suggested that girls and women use an *auditory* and subjective mode of knowing, whereas boys and men use a *visual* mode that emphasizes objectivity and detachment. Given that most researchers in this area have used interviews, which are inherently more socially connected, it is reasonable to ask whether the connectedness–separateness dimension will be evident with a less "connected" methodology. Will evidence of greater connectedness in women also be observed when a more detached and (so-called) objective visual mode is employed?

Autophotographic Method

Autophotography — the taking of photos to tell "who one is" — may be a promising method for addressing these issues. Ziller (1990) suggests that photographic essays about the self often have a "rich revealingness" about the individual and are indicative of the person's orientations or personal frames of reference. Although departing somewhat from Ziller's terminology, we propose that much of what is conveyed in an auto-photographic essay is a person's communality or social connectedness. For example, low levels of communion can be seen in the photos of socially not-yet-connected college students (Ziller & Smith, 1977) and in the social alienation of shyness (Ziller & Rorer, 1985). When asked to portray their environment, first-semester college students were less likely to include pictures of people than the presumably more settled third-semester students. Moreover, Ziller and Rorer (1985) showed in a pair of studies that shy persons were less likely to include pictures of other people.

Higher levels of communion or connectedness would also be suggested by photos of self-with-others, people smiling or touching, and family-oriented pictures. The agentic impulse is less well evidenced but glimpses can be seen in several findings, e.g., the greater inclusion of possessions by affluent than by impoverished Mexican children (Ziller, Vera, & deSantoya, 1989) and men's greater inclusion of "power" or "action" toys in their autophotographic essays (e.g., motorcycles; Ziller & Smith, 1977, Study 3). Separateness would also be suggested by pictures of the self-alone, as well as pictures of people engaged in work or in symbolic depictions of accomplishments of the self (e.g., diploma, products created by the self).

Past studies of the autophotographic method have reported a few gender differences, although not usually with specific predictions. A review of six studies with at least 20 male and 20 female subjects reveals that no differences were found in one study (Ziller & Rorer, 1985, Study 2) and, presumably because they were nonsignificant, differences were not reported in two (Dinklage & Ziller, 1989; Ziller & Lewis, 1981, Study 1). In a comparison of elderly Japanese and American subjects (Okura, Ziller, & Osawa, 1986), males included more pictures of the opposite sex whereas females included more pictures of their residence. Rorer and Ziller (1982) found that Polish and American women included more pictures of groups and of food, and more pictures coded as aesthetic, than did men from the two countries. Finally, Ziller and Smith (1977, Study 3) presented descriptive data suggesting that women included fewer pictures of motorcycles (5% vs. 30%, $p = .032$, by Fisher's exact test, our computation) and more of animals (59% vs. 30% of females and males, $p = .043$ by Fisher's exact test, our computation). [A number of gender differences were noted in studies with smaller samples (see Henry & Solano, 1983; Ziller *et al.*, 1989).]

Such findings are suggestive of the present hypothesis concerning gender and self-definition. However, they probably could neither support nor refute the hypothesis because the abstract constructs of isolation and connectedness would seem to require a variety of interpersonal coding categories (e.g., self-with-others, people touching, intergenerational pictures). Moreover, given the number of potential coding categories that might be tested in exploratory analyses (as noted by Ziller, 1990), the use of multivariate analyses would increase confidence that the results are robust.

A number of studies have used portrait photos to examine gender differences in the interpersonal category of smiling, an act that can be taken as communicating receptiveness to others, as well as submission. Mills-Ragan (1982) and Morse (1982) independently discovered that, in yearbook photographs, women smiled more than did men. Other studies have generally supported this finding (Brennan-Parks, Goddard, Wilson, & Kinnear, 1991) even after eliminating the influence of photographers' instructions (Mills, 1984). Based on meta-analyses, Ashmore (1990) regarded social smiling as a variable that shows moderate to large gender effects. Thus, in showing women's greater interpersonal orientation, these results are consistent with many other nonphotographic studies of smiling behavior (e.g., Deutsch, 1990; Halberstadt & Saitta, 1987; Hall, 1987; McAdams, Jackson, & Kirshnit, 1984; Stiles, Gibbons, & Schnellman, 1987).

Purpose of the Present Study

We propose that the autophotographic method offers a unique opportunity to examine gender differences in photographic depictions of the self that are reflective of connectedness. In the present study, college students were asked to take 12 photos for the purpose of describing "who you are." Subjects were also asked to write a short concluding statement on how they thought the photo set "does and does not capture who you are." Based on the work reviewed above, women's greater social connectedness should be evident in the interpersonal emphasis of their autophotographic essays, particularly in terms of the category *smiling*. However, given the many possible interpretations of smiling, other categories such as pictures of people touching, children, and parents or grandparents should show the effect as well. Men's greater separateness was expected to be evident in pictures of the self-alone.

As a second purpose, we consider age differences in the interpersonal photo categories. The logic of such a test for age trends is grounded in Hyde's findings of increasing femininity with age among both men and women (Hyde & Phillis, 1979; Hyde, Krajnik, & Skuldt-Niederberger, 1991). Such findings would suggest that age will correlate positively with connectedness. However, the Okura *et al.* (1986) and McCrae and Costa (1988) studies temper that expectation, suggesting that, relative to men's, older women's photo essays would still contain more connectedness.

METHOD

Subjects

The sample consisted of 142 female college students ranging in age from 18 to 49 years ($M = 22.3$, $SD = 5.6$) and 59 males ranging in age from 19 to 44 years ($M = 22.7$, $SD = 4.9$). The sample was comprised of 88% Caucasians, 10% African-Americans, and 2% persons of other racial-ethnic groups. The greater number of women participants was consistent with the proportions in the courses from which subjects were recruited.

Autophotographic Procedure

Construct validity of the autophotographic method for assessing self-conceptions has been offered in the variety of findings noted above (summarized by Ziller, 1990), and as noted there, is not limited by age or nationality. Nor is the validity of the method limited to the laboratory of a single research team (see Dollinger & Clancy, 1993; Henry & Solano, 1983).

The photography project was offered as one of several extra credit activities that students could complete as noted in the course syllabi distributed at the beginning of the semester. The autophotography exercise was completed at students' convenience; in most cases it was turned in during the last two weeks of the semester. The task used instructions slightly modified from Ziller and Lewis (1981):

> We want you to describe how you see yourself. To do this, we would like you to take, or have someone else take, 12 photographs that tell who you are. These photographs can be of anything just as long as they tell something about who you are. You should not be interested in your skill as a photographer. Keep in mind that the photographs should describe who you are as you see yourself. When you finish you will have a book about yourself that is made up of only 12 photographs . . .. Remember, these photographs are to tell something about you as you see yourself (Ziller & Lewis, 1981, pp. 238–239)

We added the instruction, "if you would like to do this project for individual project credit, take and develop the pictures, assemble them into a booklet, and write a short concluding section or self-analysis, discussing how you think the photo set does and does not capture who you are." Students were allowed to use pictures previously taken for other purposes.

Coding. Subjects' photography booklets were coded using a content analysis scheme based on categories used in a variety of Ziller's studies (summarized in Ziller, 1990). Initially we coded for 9 interpersonal variables relevant to the hypothesis. These included the major categories *self-alone, self-with-others,* and *others-without-the-self.* (These mutually exclusive categories were also summed to yield the covariate, number of pictures involving people.) Other interpersonal categories were number of pictures of *groups* (four or more people in the foreground), *people in the background, people smiling, people touching,* pictures with *children,* and pictures with *parents or grandparents.*

For reliability purposes, 69 of the booklets were coded by two of three individuals, with all pairs of coders represented in the reliability coefficients. Total scores for individual categories were correlated between raters. Interrater reliabilities for these categories ranged from .72 (background people) to .96 (self-alone), median = .89.

For exploratory purposes we also coded for 65 other content variables, many of which were based on Ziller's categories. These included the location of the picture and codes reflecting possessions, interests, and activities. Supplementary categories with reliabilities less than .65 were dropped from consideration unless (a) they conceptually parallelled another category with an acceptable reliability and (b) achieved a reliability of at least .60. The three *location* categories were outdoor, indoor/dorm or home, and indoor/other, with reliabilities of .93, .84, and .75, respectively. Among the *possessions, interests, and activities* categories, 17 variables were retained: achievement (pictures of

studying, graduation, or diplomas), athletics, alcohol, animals/pets, automobile, bed [(a) "asleep" or (b) conversing with friend], bicycle, exercise, fishing, motorcycle, religion, school spirit (e.g., pictures of college insignia on apparel), swimming [(a) sun bathing or (b) in water], television, and wedding. These variables had interrater reliabilities ranging from .60 to .92, median = .83. Because the frequencies of these codes were low (Ms ranging from .05 to 1.24 pictures per set), their association with gender was tested by the chi-square statistic. A final categorical variable was coded — whether subjects' writeups attempted to integrate the pictures into a more comprehensive life story. Such was the case in the photo essays of subjects who recounted struggles in coping, for example, with alcoholism, circumstances prompting adolescent delinquencies, or the physical incapacitation of a spouse or self after work injuries. The "life story" variable, added after the initial codings and coded by just one rater, must be considered purely exploratory in nature.

RESULTS

Main Analyses

Our basic data, then, were number of pictures coded for the nine interpersonal categories (people smiling, touching etc.). Prior to conducting univariate analyses of variance on these dependent variables, an exploratory principal components factor analysis was conducted to protect against Type I errors by first analyzing a smaller number of factors. The scree test suggested retention of two factors that were subjected to varimax rotation. The first factor was best defined by the categories self-with-others (loading = .86) and people touching (.80), but included pictures of people smiling (.75), groups (.74), and people in background (.62). Factor two comprised the categories others-without-self (.76), parents/grandparents (.63) and self-alone (-.74). Pictures of children had more moderate loadings on both factors (.42 and .36 respectively). (Separate factor analyses for men and women yielded very similar results, the main distinction being a more salient loading of child pictures on Factor 2 for men, Factor 1 for women. Moreover, an oblique rotation of the main findings yielded results very similar to the orthogonal rotation.) Thus, Factor 1 seems to reflect general social connectedness. Factor 2, while less intuitively labeled, appears to reflect pictures of others taken by the self (especially of one's family) vs. pictures of oneself taken by another. We tentatively label this factor cross-generational connectedness vs. isolation. Low scores on this factor seem to represent what Belenky et al. (1986) called separateness. Although two connectedness factors may not seem parsimonious, the negative loading for self-alone does add to the construct validity of the connectedness–separateness distinction.

Table I. Gender Differences in Interpersonal Photographic Categories[a]

	Male		Female			
	M	SD	M	SD	F	d
People	8.53	4.02	8.78	3.30	0.22	.07
Self-alone	4.22	3.48	2.78	2.30	11.86[e]	.52
Self with-others	3.28	2.84	4.54	2.87	8.14[d]	.43
Others/no self	1.03	1.59	1.46	1.71	2.77	.26
Background people	1.14	1.21	1.64	1.57	4.67[c]	.34
Group[b]	0.95	1.05	1.53	1.49	7.13[d]	.41
People smiling	3.68	2.83	5.82	2.83	23.78[e]	.72
People touching	1.73	1.69	2.90	2.11	14.48[e]	.57
Children	0.69	1.73	1.50	1.95	7.71[d]	.42
Parents + Grandparents	0.47	0.96	0.83	0.91	6.39[c]	.38

[a] Data points consisted of number of pictures, not number of people. The d statistic reflects effect size in standard deviation units.
[b] Signifies four or more people in the foreground.
[c] $p < .05$.
[d] $p < .01$.
[e] $p < .001$.

Factor scores on these two dimensions were the dependent variables in a multivariate analysis of covariance with gender as the independent variable. Although men and women did not differ on number of pictures of people (Table I), we included this measure as a covariate because it correlated with all dependent measures. Also, while most students took 12 photos, there was some variation in the total number of "people" pictures, which suggested use of this measure as a covariate. This analysis yielded a significant multivariate gender effect, Wilks's lambda = .85, $F(2,197) = 17.6$, $p < .001$, and significant univariate effects for both factors, $F(1,198) = 27.4$ and 11.5, respectively, both $p < .001$. The covariate exerted a significant effect on both factors as well, $F(1,198) = 157.7, p < .001$, and 10.8, $p < .01$, respectively. The direction of mean adjusted factor scores supported the prediction that women would surpass men on social connectedness, Factor 1 $Ms = .17$ for women, –.41 for men; Factor 2 $Ms = .15$ for women, –.36 for men. (A multivariate analysis of covariance using all 9 interpersonal variables, rather than the 2 factor scores, also showed a highly significant main effect of gender.)
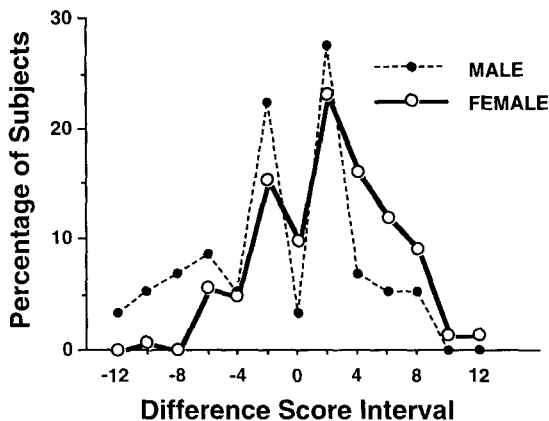
Fig. 1. Frequency distributions, by gender, for the difference between number of self-with-others and self-alone photos in intervals of 2. Positive differences indicate more connectedness; negative differences indicate more separateness of self-definition.

Table I presents results for the individual interpersonal categories. Women's photographic essays included significantly more pictures that could be described as interpersonally connected — depictions of people smiling, touching, groups of people, people in the background, as well as family-oriented pictures. [Because of the relatively low number of cross-generational pictures, we also tested for the association of gender and presence/absence of any child pictures. More women included at least one picture of a child than did men, 61% vs. 32%, $\chi^2(1) = 14.1, p < .001$. Similarly more women included a picture of their parents or grandparents than did men, 58% vs. 27%, $\chi^2(1) = 15.7, p < .001$.] Men surpassed women only in the more agentic-like category of self-alone.

To understand the basic patterns more qualitatively, consider those photo essays in which many more of the pictures were socially connected or separate. As shown in Fig. 1, men were somewhat more likely to show pronounced preferences toward isolation. Women who showed a pronounced preference usually had more connected photos.

Age Correlates

The general connectedness factor was unrelated to age among either men or women, $rs = .11$ and $.10$, respectively. The intergenerational connectedness vs. isolation factor differed by gender in its relation to age.

This factor correlated positively with age among women, $r = .17, p < .05$, and negatively with age among men, $r = -.23, p < .10$. Moreover, these correlations differed from each other, $z = 2.50, p < .05$. The meaning of these findings is clarified by age correlates of individual items within the factor. Specifically, the category of self-alone was positively correlated with age among men, $r = .27, p < .05$, but not women, $r = -.04$; for this difference $z = 1.98, p < .05$. The category of children was strongly related to age among women, $r = .64, p < .001$, but not among men, $r = .10$; for this difference $z = 4.11, p < .001$. These findings are supportive of the predicted increasing connectedness with age among women but not men.

Two other age correlates deserve mention. First, religious depictions (e.g., Bible, church, religious medallions) increased with age among both men and women, $r = .41, p < .01$ and $r = .31, p < .001$, respectively. Second, use of an integrative life-story framework to organize one's pictures was related to age among both men and women, $r = .27, p < .05$, and $r = .26, p < .01$, respectively. These correlates suggest that older subjects' self-depictions were more transcendent of temporal or materialistic concerns. These intriguing findings require longitudinal designs to separate intraindividual changes and cohort effects.

Supplementary Results

Table II presents other gender differences for low-frequency items tested via the chi-square statistic. Men's photographic essays more often included activity-oriented pictures and pictures of valued possessions (e.g., one's "wheels"). The largest of these supplementary differences was for the category of motorcycle, replicating a finding from Ziller and Smith (1977). Interestingly, the number photos of one's bed was approximately the same for men and women. However, men more often depicted themselves sleeping (or pretending to do so) — conveying how sleep is an important part of who they are; women more often showed the self in interaction with a friend (seated on the bed in conversation). Women also included more animals and pets, often in a pose of holding or petting the animal. These results further underscore women's greater social connectedness. Women and men did not differ on 8 other categories. Most notably, the percentages of men and women who included achievement-related images in their photo essays did not differ, 30.5% of men vs. 34.5% of women, $\chi^2(1, N = 201) = 0.30$, ns.

Table II. Other Gender Differences (in Percentages)[a]

	Men	Women	χ^2
Athletics	68	44	9.16^c
Exercise[a]	20	8	5.60^b
Animals/pets	36	57	7.67^c
Fishing	12	3	6.60^c
Motorcycle	25	2	27.78^d
Automobile[a]	44	16	17.56^d
Asleep	20	6	10.06^c
Socializing/bed	5	22	8.32^c

[a] With the exception of those indicated by subscript *a*, entries are percent of subjects with at least one such photo. Those with a subscript *a* are percent with at least two such photos; these were not significantly associated with gender at the one-or-more photo cutoff but mean differences suggested use of a different cutoff. Intercoder reliabilities for these categories exceeded .80 for all variables except automobiles (.60), fishing (.69), asleep (.68), and socializing in bed (.62).
[b] $p < .05$.
[c] $p < .01$.
[d] $p < .001$.

Finally, although both men and women included more indoor than outdoor photos, women showed this preference more frequently than did men [Ms = 7.34 vs. 6.41 indoor photos, $F(1,199)$ = 5.21, $p < .05$, d = .35]. This was evident for both the dorm/home and indoor-other categories, albeit nonsignificantly in both cases. Correspondingly, men included outdoor pictures more than women (Ms = 5.23 vs. 4.33; because indoor and outdoor pictures sum to total pictures, they are ipsative — testing one variable effectively tests both).

DISCUSSION

Social Connectedness

Our findings are consistent with but extend studies examining women's definition of the self, moral reasoning, and ways of knowing (Belenky *et al.*, 1986; Gilligan, 1982; Lyons, 1983). Based on interview data,

these authors "hear women's voices" as conveying a self-in-relation. Our observation of more connectedness in women's autophotographic essays — using a visual mode of knowing — makes earlier conclusions more compelling. Women in our sample included more communal or connected pictures involving smiling, touching, groups of people, as well as children and parents or grandparents. Further evidence of connectedness was seen in pictures presented by women that depicted conversations with friends and poses holding pets.

In contrast, males more often portrayed themselves alone, which conveys the abstraction of separateness in an especially vivid way. Moreover, men's photo essays more often included pictures of physical activities and pictures of their motor vehicles. We suggest that such photographic depictions relate to what Jordan (1991, p. 144) has called the "power-dominance experience of selfhood." Consistent with this interpretation, Mosher and Sirkin (1984) noted an association of driving with hypermasculinity. So, too, Newman (1973) noted that an "association of the car with power, speed, freedom, adventure, and linearity aligns it with traditional concepts of the male role." However, it is noteworthy that our men and women subjects were equally likely to include at least one photo of their car; the pronounced difference occurred for the two-or-more photos cutoff. Thus, it is probably not attributable to possession or *opportunity* to take such photos; rather, it seems to reflect the automobile's special *significance* for most of our male subjects. Future researchers should consider coding for types of autos because advertising images make it likely that different styles or makes of car would be deemed more identity relevant and photo worthy by at least some men (cf. Baran & Blasko, 1984). Our results for the athletics and exercise photo categories also support the suggestion that men define the self in terms of abilities and activities — areas where separateness is valued or accentuated — more than do women (Belenky, *et al.*, 1986; Lyons, 1983).

Age correlates suggest that gender differences in connectedness become more pronounced with age, findings somewhat at variance with those of Hyde (Hyde & Phillis, 1979; Hyde *et al.*, 1991). Like Hyde's, our women subjects became more connected with age. However, unlike Hyde's, our male subjects showed more separateness with age. Obviously Hyde's study was based on longitudinal data whereas ours was cross-sectional, and this difference might account for the different findings. That is, the present findings may reflect cohort differences as well as developmental changes. Alternatively, one might interpret our findings for men as an artifact. That is, these results would obtain if older subjects were more often married *and divorced* and mothers more often attained child custody, both reasonable assumptions. While plausible, we must note that divorced males in several cases included dramatic stories of their struggle for child custody,

including numerous pictures of their "lost child." This explanation also falls short because the effects were not only found for child photos but also for pictures of the self alone. Given the unavoidably smaller sample of male subjects, replication is the advisable course before placing too much confidence in this finding. However, given the convergence with Hyde and the larger sample size, our findings for women are probably robust.

Other Age Differences

A pair of unpredicted findings was quite provocative. Relative to younger subjects, older subjects were more likely to include depictions of their religious identity and to organize their photo essay so as to tell parts of their life story. This pair of findings, holding true for both genders, suggests that our older subjects transcended some of the materialistic and immediate temporal concerns of the more typical college student. Particularly for the life story variable, these findings are consistent with the shift toward "interiority" in middle age noted by several authors (Buhler, 1935; Jung, 1933; Neugarten, 1976; Ryff & Heincke, 1983). That is, subjects who related their life story through the photo set seemed to engage in a process of "taking stock" or reappraisal of the self, and seemed to have a greater awareness of their own life cycle — a sense of continuity of the self despite changes in circumstances or adaptation. Of course, the lesser interiority of our younger subjects may reflect different values in the current cohort of undergraduates.

Other Gender Differences

Our results also extend research on gender and smiling. The greater smiling observed in the photo sets of our female subjects is consistent with studies of smiling using portrait photos (Brennan-Parks *et al.*, 1991; Mills, 1984; Mills-Ragan, 1982; Morse, 1982). The behavior of smiling is often ambiguous and open to such interpretations as submission, ingratiation, or holding of a weak position in the power/status hierarchy. Such interpretations of the present findings are undermined somewhat by the fact that smiling was one of the best markers of the general connectedness factor (with a .70 loading). It correlated quite strongly with both self-with-others and touch photos ($rs = .57$ and $.51$, both $p < .001$; their respective loadings on the first factor were .85 and .78). Overall, then, our results suggest that, in some instances, smiling might be conceived as part of one's sense of self, as well as being a sign of submission, ingratiation, friendliness, interpersonal receptiveness, and so on.

The present findings also contribute to the broader context of research examining gender differences in young adults' attitudes about life domains (Blais, Vallerand, Briere, Gagnon, & Pelletier, 1990) and task- vs. person-oriented friendship patterns (Caldwell & Peplau, 1982; Wright, 1982). Relative to men, women rated interpersonal domains as more important including friends, family, and significant others; they also rated themselves as more involved in these domains. As in the literature noted above, men's views reflected a more instrumental or separateness orientation. For example, males attached more importance to an area such as sports (Blais et al., 1990). Supplementary findings in the present study are consistent with these value preferences. It is noteworthy, however, that gender differences on the achievement category were minimal and indeed women slightly exceeded men on this category.

One unpredicted difference was that women took more indoor pictures than did men (63% vs. 55%); men took more outdoor pictures than did women. This effect seems mildly reminiscent of Erikson's (1951, 1968, 1974) classic notion of inner vs. outer space, particularly when considered together with the Okura et al. (1986) gender difference in pictures of one's home. The inner space notion has a mixed history of both empirical support (e.g., Cramer & Hogan, 1975) and lack of support (Budd, Clance, & Simerly, 1985; Caplan, 1979; McKay, Pyke, & Goranson, 1984), and has been regarded as conceptually insufficient for understanding women's identity development (Franz & White, 1985; Patterson, Sochting, & Marcia, 1992). Although our finding might make sense within Erikson's framework, the nature of the data — adults' photographs — are quite different from the phenomena studied in most of this research (children's constructions with blocks); the effects were unexpected and rather small, and the differences could be a function of the other categories of difference (e.g., automobiles, motorcycles, and athletic events are rather unlikely to be found indoors). Even if this artifactual interpretation could be ruled out, it would be difficult to attribute causality for such differences. For example, it could be due to differential reinforcement of proximity by parents (cf. Block, 1984).

Several of our gender differences (e.g., pets, motorcycles) replicate past autophotographic findings (Ziller & Smith, 1977). Although increasing confidence in their replicability, this point reminds us of alternative conceptual frameworks for thinking about gender differences. Using Ziller's (1990) concept of orientations, one might merely state that men and women orient toward different facets of environments. One might then argue that these orientations have more to do with socially dictated roles or life circumstances than to an underlying abstraction of connectedness — that subjects' photos reflect life situations over which they might have little choice.

This difficult issue is inherent in photographic methodology (cf., Mills, 1984, regarding women's poses for yearbook photos). Our reply to this concern is that, relative to questionnaire and interview methodologies for assessing identity, the task does in fact empower subjects; specifically, that they are invited to take or direct, and to select the final set of photos, with the ultimate goal of making a statement, "This is who I am."

Implications for the Study of the Self

Thus we underscore the method's strength: that subjects have maximal control over how and where the photos are taken, and once developed, whether they contribute to a meaningful portrayal of who they are. Furthermore, despite our assurance in the initial instructions that their photo sets would be returned, a number of subjects made a point of seeking a guarantee about this. Subjects' ownership of the pictures represents both a limitation and strength of our study. It is a limitation in the sense that we could not retain the "raw data." It is a strength in that subjects treasured the pictures and therefore regarded them as a valued part of "who they are." Such concern is rarely seen when questionnaire and interview formats are employed.

A number of the categories coded from the autophotographic essays invite comparison with William James's (1890/1968) three-part components of the self: material/physical self, social self, and spiritual (e.g., personality, values) self. Some students emphasized one or another of these self components. In accord with the major thrust of this work, women's greater inclusion of interpersonal pictures suggests a greater emphasis on the social self. Interestingly, the material self was more evident in men's photo essays, with greater inclusion of pictures of their motor vehicles and activities (e.g., exercise, fishing). So, too, their greater inclusion of self-alone pictures may reflect a metacommunication of "this is my physical self, my body."

As to the spiritual self, many subjects seemed to allude to its existence when they wrote about the difficulties of portraying their "true" selves through static photos. Some attributed this to the photographic method. However, we would argue that it can be assessed in the creativity and self-reflectivity evident in some photo essays. Consider the case of a young woman in Air Force ROTC who selected a photo depicting herself in a jet cockpit. Her written comments described the sense of exhilaration, accomplishment, freedom, and future career goals that the picture symbolized. This woman touched on her "spiritual self" — clearly a very agentic one — in ways that many of the male subjects, standing pridefully by their

automobiles, might have envied. We suspect, then, that those who really wished to focus on a "true self" did so in the written portion of their photo essays. Older subjects in particular attempted to portray their spiritual self more literally by including pictures of religious symbols (e.g., Bible, cross, church) in their photo set. Additionally, the older subjects more often included pictures that contributed to the telling of their life story, further suggesting a kind of temporal transcendence that one might associate with the spiritual self.

Future Directions and Conclusions

The present study demonstrates the usefulness of autophotography as a tool to study self-definition, particularly in terms that allow an examination of self-in-relation to others or social connectedness. It can be hypothesized that expression of the self through the autophotographic method is also related to other domains of the self such as gender roles and personality. No measure of gender roles was taken in the present study, but Halberstadt, Hayes, and Pike (1988) found that gender roles did not account for smiling differences between men and women. We expect that our results too would not be explained entirely by a difference in gender roles. However, we acknowledge that it should be included in further studies and with different populations. For example, would gender differences in connectedness also be evident in the autophotography essays of children? We would predict an affirmative answer based on relevant theory (Chodorow, 1974) as well as empirical findings with children in studies by Gilligan (1982), Lyons (1983), and the McGuires' (1982).

An examination of the personality correlates of autophotography essays is also a promising approach for future research. Ziller claims that "through photography, we instantly become artists" (1990, p. 37), and the autophotographic method is "an invitation to creativity" (1990, p. 143). Elsewhere we argue that there are individual differences in response to this invitation (Dollinger & Clancy, 1993), and show that meaningful differences in photo essays exist along a dimension of concreteness/dullness vs. abstractness/self-reflectivity. If this dimension reflects an aesthetic aspect of the spiritual self, it should, and indeed does, correlate with the personality dimension called culture or openness to experience (McCrae & Costa, 1985). In some respects, our age correlates (religion, life story) also reflect concern by older subjects with transcendent issues that touch on the spiritual self, as well as corroborating past findings using nonphotographic methods (Spilka, Hood, & Gorsuch, 1985; Wulff, 1991). Clearly,

such results deserve further attention, particularly for the exploratory category we called "life story." The recently devised "Inclusion of Other in the Self" scale (Aron *et al.*, 1992) is another measure worthy of study in conjunction with the autophotographic essay approach.

Overall, then, our results provide support for the argument that men and women define the self in different ways (Belenky *et al.*, 1986; Gilligan, 1982; Lyons, 1983). Women define the self through relations with others whereas men have a more "separate" identity. Our results seem very clear using what, in the Belenky *et al.* terminology, would be an objective and "masculine" visual mode of knowing. Given the vividness with which many subjects portray the self using the autophotographic method and the clarity of the results, we suggest that these data are a particularly compelling demonstration of the social connectedness–separateness construct and its relation to gender.

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